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THE SURGICAL IMPORTANCE OF THE VISCERAL CRISES IN THE ERYTHEMA GROUP OF SKIN DISEASES.*

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I have selected this subject for the paper of the evening in order to bring before the Surgical Section of the Academy of Medicine, a condition which is very uncommon and which has received but little attention in this country. It is of very great interest to physicians as well as surgeons. I say uncommon, because a very careful examination of the title of papers published since 1900 revealed very few on the surgery of this subject published in this country, in fact, only four giving reports of cases operated on. A few articles have appeared in the English medical journals.

To Osler[1] more than any other writer is due the credit of calling the attention of the medical profession to the surgical importance of the visceral crises in the erythema group of skin diseases. He has written no less than five articles, and has collected twenty-nine cases illustrating the subject. In fact, he is so deeply impressed with the importance of this subject that he states that the possibility of mistaking these visceral crises for appendicitis or intussusception or obstruction of the bowels and handing the patient over to the surgeon for operation is by no means remote. Although Osler[2] classifies these cases into five groups, there are only three of great interest in connection with this paper.

"First, those in which the colic occurs in connection with a pure angioneurotic edema,—Quincke's disease.

"Second, in this class there is arthritis associated with the erythema or purpura and colic, the group which Henoch describes and the form known by his name.

"Third, there is a remarkable group of cases, really most difficult to recognize, in which there is only recurring colic and nothing else. These attacks of colic may recur for years and years before any skin lesion appears."

In a careful examination of the literature of the subject I found nine cases operated upon, to which I add a personal case recently operated upon, and two cases examined after death. The history of my case is given in full.

GROUP I.—Those cases in which the colic occurs in connection with pure angioneurotic edema, Quincke's disease. Two cases.

CASE I.—Osler. A young woman who had many attacks of nausea with vomiting, and tenderness over the abdomen. An operation was performed for appendicitis but the appendix was found to be normal. Following the operation angioneurotic edema appeared on the face and she has had several similar attacks since.

CASE II.—Dr. T. B. Harrington[3] reports the case of a young woman, aged 26, single, who fifteen years ago began to have swellings in hands and feet, accompanied by no pain. Has been having attacks ever since at decreasing intervals, at present every two weeks; swellings extend to elbows and occasionally involve the face. Abdominal pain limited to lower half of abdomen, not well defined, does not radiate; nausea, vomiting and headache with attack. The vomit is liquid and green, never bloody, and one to two quarts at a time. Has never been jaundiced, but is constantly troubled with gas and distress after meals. Bowels regular, stools never bloody. Urine negative. Operation during an attack of colic. Good amount of clear fluid among the intestines and filling pelvis; nothing found in abdominal organs except that the intestines were engorged with blood, and so red that a mild peritonitis was at first suspected. No hemorrhagic areas in intestinal canal. At a short distance from the ileo-cecal valve, a cylindrical enlargement of the ileum was seen 2½ inches long, and entirely surrounding the gut, increasing the circumference of the bowel to twice the ordinary size. The swelling was evidently in the bowel wall, was elastic to the touch, but did not pit on pressure. Appendix removed and found normal. Harrington states: "It can be easily understood how such an infiltration could derange peristaltic action of the intestine. The engorgement of the intestine and the free fluid were explained by the violent peristalsis brought on in the effort to press down the lesion which was actually in the intestinal wall. There was no distension above the lesion since the finger could be easily

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passed into the swelling at either end. She had a comfortable convalescence though some colic attended the first movement of the bowels after operation. An attack of swelling of the skin came on before her discharge from the hospital."

Morris[4] in writing of angioneurotic edema states that "it is a disease characteried by transient swellings in various parts of the body, as, for example, in the skin of the extremities, of the face, in the mucous membranes of the mouth, pharynx, and larynx. Severe gastro-intestinal symptoms of comparatively short duration often accompany the visible swellings or alternate with them."

Heredity plays a prominent rôle in the etiology. Ensor[5] states: "Out of eighty persons in one family, thirty-three are or were affected with the disease. In another family the disease could be traced back through six generations. It occurs at all ages, but seldom before puberty, and the tendency to recurrence remains throughout life." Harrington adds "that for the first few years the manifestations of angioneurotic edema are limited to the skin, when gradually abdominal symptoms become prominent. The abdominal symptoms may be due to either gastric or intestinal lesions, or to both. Colic, vomiting, diarrhea and occasional passage of blood are the usual symptoms. The pain ordinarily begins in the epigastrium and spreads over the abdomen. It is a generalized pain and does not radiate to the shoulder blade or other diagnostic localities. At first the painful attacks may show themselves once a month and disappear after a few hours and without further disturbance, but later in the disease nausea and vomiting supervene in each attack. The pain is probably due to interference with the function of the stomach and intestines by the edematous deposit."

Morris reports a case in which a portion of the gastric mucosa becomes detached in using the stomach tube. It was examined histologically and showed an extreme edema of the interstitial tissue, the lymph spaces and vessels being enormously distended.

GROUP II.—In this class there is arthritis associated with the erythema or purpura and colic,—the group described by Henoch.

Under this head Osler[1] reports a case of Dr. McCrea's, Sutherland[6] reports two cases, Barron[7] one, Fisher[8] one, Lett[9] one, Smith[10] two, and Greig[11] one. I report the following case:

CASE IV.—J. G., aged 6 years and 8 months; born in this city of American parents. Father died of septic endocarditis. Mother alive and perfectly well. As a baby, was thin, delicate, perspired freely about the head. Slow closure of the anterior fontanelle. During infancy the patient was bottle-fed. Malted milk was the principal food; later beef juice and oatmeal gruel were added. This diet was continued until three years old. Would often have pains in the joints especially when handled. When about three and a half years old he was suddenly seized with attacks of being unable to walk, coming toward evening. He then had to be carried, for the pains were severe in the legs and feet. These pains were not accompanied by swelling or redness in joints. Sometimes a slight red rash would come out over the body; this would begin about 6 P. M., and last until he went to sleep. In the morning he would be very bright. On August 20, 1908, had an attack of vomiting and colicky pain in the abdomen after eating ice cream. There was no rise of temperature, and the pain passed off in a few hours after the administration of a cathartic. Soon after he had to be carried upstairs for a few days on account of pains in the knee and ankles. No swelling or redness. September 15, 1908, had a similar attack and was relieved by calomel and castor oil.

On September 25th, after eating ice cream, was again seized with very severe pains, more or less continuous, in the region of the umbilicus. After a few hours the pains became localized about McBurney's point. Vomited several times. No blood in vomitus. Temperature 99.4°, pulse 90, respiration 24. Ice bag applied to abdomen and calomel given. When I saw the case early in the afternoon of the next day the pain was less and vomiting had ceased. A papular urticaria with dark centers was noticed over the body on the arms, hands and buttocks. Pressure over the calves of the legs caused pain. The abdomen was retracted but not rigid. Pressure produced pain as above. The pulse was very weak; tongue coated. The boy looked very ill and acetone could be easily recognized in the breath. Looking upon the case as one of gangrenous appendix, I advised an operation, but before the question was decided I asked that Dr. Francis Huber be called to see the boy. After a careful examination Dr. Huber also advised operation. We decied to operate at the child's home at 8:30 the same evening. I had also advised that Dr. Sondern be called to make an examination of the urine, and a blood count. About 6 P. M. I received Dr. Sondern's report on the blood: "A very slight leucocytosis (12,800) with a normal differential count." He also stated that he would telephone the report of the urine to the patient's house and requested me to delay the operation until I heard from him. He reported the presence of a large quantity of acetone, some diacetic acid and a marked excess of indican, but no albumen, blood or renal elements; and he advised very strongly against operation as the patient would probably bear the anesthetic very badly on account of the presence of acetone and diacetic acid in the urine.

Operation was postponed. Sodium bicarbonate, 5 grains, in vichy by mouth, and 30 grains by enema were ordered. The patient had quite a comfortable night and seemed better the next day. All went well excepting slight attacks of pain until the morning

of October 13, 1908, when Dr. McGowan was called to see the boy, who was then suffering most agonizing pain, screaming out and throwing himself about the bed. There was tenderness on pressure in the right iliac fossa and over the epigastrium; the right rectus was somewhat rigid. A tumor in the right iliac fossa was easily felt by Dr. McGowan. A papular eruption was noticed about the right ankle. Morphia was required to relieve the pain. When I saw the child in the forenoon of the same day there was some tenderness on pressure over the points mentioned above, but no tumor was felt. The child seemed so ill that I decided to open the abdomen.

At 2:30 P. M. of the same day, with the assistance of Drs. Huhn, Sheils and McGowan, Dr. Gwathmey administering ether, I opened the abdomen through a Kammerer incision. Some free fluid escaped. The appendix was examined and removed. It was found to be four inches long, pale, contracted, clubbed at its end and strictured near its attachment to the cecum. The last six inches of the ileum were much enlarged, its walls thick, edematous and of a very dark color, with no ecchymosis. It appeared like a portion of a bowel that had been the seat of an intussusception. The incision was enlarged upward slightly and the entire length of the small intestine, from the ligament of Treitz to the beginning of the last six inches of the ileum, was very pale and in a condition of spasmodic contraction which relaxed the moment it was touched. Two spots of ecchymosis about the size of a five-cent piece were found in the wall of the intestine just below the point where the gut passed under the ligament of Treitz. The mesentery of the small intestine was studded with enlarged glands. Those nearest the swollen intestine were of considerable size, but grew smaller as they approached the root of the mesentery. The wound was closed and the patient's convalescence was uneventful until about three weeks after the operation when an attack of paroxysmal pain occurred during the night. In the morning the temperature was subnormal. On careful examination of the skin a perfectly characteristic purpuric eruption was seen on the ankles, extensor surfaces of the knees and elbows. Indican in considerable quantity reappeared in his urine. One of the marked features in this case was the obstinate constipation existing through the entire illness. Cathartics in large quantities had little or no effect.

A few days ago while the boy was playing on the street another boy struck him on the abdomen. This was soon followed by a passage of blood from the bowels.

The following are the most important symptoms of Henoch's purpura. The affection runs a somewhat prolonged course, but begins suddenly, without obvious cause of antecedent illness. The symptoms affecting the alimentary tract are of a marked character. The abdominal pain is severe, frequently of extraordinary intensity, of a colicky nature, occurs in paroxysms, and is referred to the umbilical, epigastric or the right inguinal regions, and sometimes over the sigmoid. The patient cries out, tosses about, presses his hands on the abdomen, or presses the abdomen on the bed. Nausea soon follows, and frequently the vomited matter contains blood. The tongue rapidly becomes coated. The breath is offensive and may bear the odor of acetone. At first constipation is marked, but in a few days diarrhea sets in, the movements are offensive and in some cases may contain blood and mucus. Constipation may be a marked feature throughout the entire illness, as in my own case and one other mentioned. The act of vomiting, or an evacuation of the bowels, seems to give temporary relief to the abdominal pain. The abdomen in the majority of cases is slightly rigid but not distended as a rule.

Tenderness may be present on pressure in the umbilical region, over the epigastrium, the right iliac fossa, and the region of the colon, especially if tenesmus is a marked feature, as sometimes happens; but as a rule there is nothing abnormal to be detected on physical examination. The attack may last for a few hours or a few days, and then there is a gradual remission of the symptoms until the next attack. "They have a great tendency to recur for weeks, months or even years. They are coincident with the skin eruption but may even precede it by several hours, sometimes a few days. The abdominal symptoms are such as may well be due to serous or hemorrhagic effusion into the coats of the gut; it being essential that the serum or hemorrhage should be within the intestinal wall, and not merely from the mucous surface, for melena is extremely common in all forms of purpura without colic." Lennander[12] who has devoted much time to the study of the cause of abdominal pain, states "that either serous or hemorrhagic infiltration of the wall of the stomach or intestines, if sufficient to produce stretching of the mesenteric attachments, would produce colic." Clinical and post-mortem observations show that hemorrhage into the intestinal wall may give rise to intussusception, also that necrotic ulcers may form, perforate and cause death from purulent peritonitis. Occasionally, but not always, hemorrhage occurs into the mucous membranes of the nose and throat, and may lead to more or less epistaxis. Then hemorrhages may be seen in the lips, cheeks, mucous membranes of the palate and the gums. Never, however, does loosening of the teeth occur as in scurvy. Nor is swelling, a spongy change in the gums, or ulceration observed.

Pains, with or without swelling and redness, at the joints are present in many of the cases, and vary in intensity from slight inability to walk to pains re-

sembling acute rheumatism. The knees, ankles and elbows are the joints most frequently involved. The pains are temporary as a rule. The blood presents no characteristic changes. Osler[13] states there is a slight leucocytosis. Usually the number of leucocytes is below 14,000, although in sixteen cases of which blood counts were made, in two a leucocytosis of 30,000 was recorded. There is usually a normal differential count. Dr. Sondern's report in my own case gives a perfect picture of the changes in the blood, viz., a very slight leucocytosis, 12,800 with a normal differential count. The urine not infrequently contains albumen, blood and casts. One other symptom that is mentioned in the history of almost every case, the facial appearance is that of a patient very seriously ill, and the prostration is most marked.

Sutherland[14] in speaking of the eruption in Henoch's purpura, states that "the skin hemorrhages differ in some respects from those met with in the common forms of purpura. They are as a rule lighter in color and of a blotchy character, so that the eruption might easily be confounded with that of measles. The type of the eruption varies greatly at different times. There is often a diffused erythema, with raised wheals of an urticarial character which subsides later into papules or nodules with a dark center. The distribution is characteristic, a special preference being shown for the extensor surfaces of the large joints, viz., the hips, knees, and the elbows."

Lett states that in his case as the days passed the purpuric eruption spread over the most of the body; the wound became purpuric and sloughing with beginning gangrene of the fingers of the right hand. The eruption may appear early in the disease or not until the patient has suffered for many years from attacks of recurring colic. If the eruption has not appeared before operation it may appear the following day, the operation possibly having some influence in bringing it to the surface. The cases of Henoch's purpura are so rare, and so little has been written on the surgical importance of the subject, that a physician or surgeon might easily overlook, in the face of the prostrated appearance and urgent symptoms, the presence of a diffuse erythema or papular urticaria and advise operation, unless his attention had been specially called to the subject. But when there is a marked purpuric eruption more weight would be placed on its presence and delay in operating advised.

DIFFERENTIAL DIAGNOSIS.—The most important surgical diseases to be differentiated from Henoch's purpura are (a) intussusception; (b) appendicitis. In those cases where the visceral crises occur independently of the skin lesions, it is most difficult to differentiate between these diseases.

(a) *Intussusception:* Lett states "that a purpuric eruption, joint pains, hematuria, vomiting of blood, or a history of a previous attack should remind one that the patient may be suffering from Henoch's purpura. In the absence of all these signs it may also be remembered that whereas Henoch's purpura is rarely met with in children under three years of age, and generally occurs in children several years older than this, the great majority of cases of intussusception occur in babies. Mr. Fitzwilliams, in 648 cases under the age of twelve years, found that 466, or 71.9%, occurred in children not more than twelve months old, and only 6% between the ages of seven and twelve."

The character of the onset of the abdominal pain will not materially help the diagnosis, as in both intussusception and Henoch's purpura it is sudden and may be preceded by diarrhea. In both conditions the pain is paroxysmal and extremely severe; between the paroxysm the patient is fairly comfortable, though in the later stages of intussusception the pain becomes more continuous. A slight rise of temperature is not uncommon in both conditions.

Erdman[15] and others say that the vomiting in intussusception is not an early symptom, *i. e.*, within the first twenty-four hours, but it is present in almost every case over that duration. If severe vomiting is present from the beginning, and especially if the vomit contains blood, the probabilities are against the case being one of intussusception. Tenesmus is an early symptom in intussusception, especially if accompanied with frequent passages of blood and mucus per anum, though tenesmus with passages of blood and mucus may occur in Henoch's purpura.

The presence of a tumor Lett believes to be the crucial test, and the one which should be relied upon above all others in making a positive diagnosis of intussusception. Statements vary as to the frequency with which a tumor can be felt. Erdmann[16] states that "palation is not followed in 50% by the finding of a tumor, and certainly not the classical sausage-shaped tumor of the text-books; but one is more likely to find no tumor from the fact that very often the tumor is hidden behind the costal arches of either side," in cases of intussusception. Rectal examination reveals a tumor far less often in intussusception than does abdominal palpation, unless the case be one of a day or more duration, but as a rule, and I might say almost invariably,

withdrawal of the examining finger is followed by blood and mucus. Mr. M'Adam Eccles found a tumor present in 83.3 per cent. in a series of sixty-eight cases of intussusception. Lett reports tumor present in 100 per cent. in a series of twenty-four cases operated on by himself, in some of which cases, however, anesthesia was needed to relax the abdominal wall. Hemorrhage into the intestinal wall may produce a tumor which can be palpated, but in most cases it will lack certain features which are characteristic of an intussusception. It will not contract and become more obvious on palpation and during a paroxysm. Nor will it be possible to partially reduce it by palpation through the abdominal wall.

Abdominal tenderness, with or without rigidity. and distension, is not present, as a rule, in Henoch's purpura. In intussusception the abdomen is neither distended nor tender at first, though the intussusception is tender and manipulation causes it to become hard and will bring on an attack of pain.

In Henoch's purpura there is a slight leucocytosis and a normal differential count. In intussusception just as soon as the bowel becomes constricted and the circulation interfered with, there will be a leucocytosis and an increase in the polymorphonuclear cells.

(b) *Appendicitis:* The disease may be differentiated by the sudden onset of pain, often first in the epigastric region, then in the right iliac fossa, rarely paroxysmal, rapidly diffusing itself upward and across the median line to the left, if the case is very acute. Although vomiting frequently occurs in appendicitis it occurs at the onset, is of short duration and most frequently of the contents of the stomach only. A tumor may be felt, but this is generally late in the disease after abscess formation; or sometimes early, especially in children, caused by a mass of omentum surrounding the appendix, this being found just below and to the right of the umbilicus. It does not have the doughy feel of the tumor in intussusception, nor does it contract and cause colicky pain during examination.

In appendicitis, abdominal tenderness and rigidity are generally marked, especially over McBurney's point or just below the liver; if perforation has taken place the entire abdomen is tender and rigid. The bowels, as a rule, are constipated, diarrhea is not infrequent, but there are little or no tenesmus, and no bloody stools containing mucus. The temperature is generally above 100° F., the face flushed and the patient has the appearance of suffering from an inflammatory disease, except in the very acute gangrenous form when the temperature may be subnormal. Appendicitis is not limited to any age. The blood count shows leucocytosis, in many cases very marked, and a great increase in the polymorphonuclear cells, varying from 70% to 95%. There will be no eruption, or angioneurotic swellings, joint pains, hematuria, nor previous history of frequent attacks of paroxysmal pain, often covering a long period of time.

My experience with one case, and a careful study of the cases reported leads me to emphasize the practical lessons drawn by Osler[1] "first, that in children with colic the greatest care should be taken to get a full history, which may bring out the fact of previous attacks, either of skin lesions, or arthritis, or of intestinal crises; and secondly, to make the most careful inspection of the skin for angioneurotic edema, purpura or erythema," and I may add that in an accurate examination of the blood, with a differential count we have the most important aid in differentiating those cases which need surgical treatment.

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5 EAST 43RD STREET.

MORPHINE IN SURGICAL NARCOSIS.

1. Whenever morphin is to be given it should always be given before instead of after the operation, in order to obtain the benefit of this drug in the induction and maintenance of anesthesia.

2. All athletes and alcoholics should have this preliminary dose of morphin.

3. In extremes of life, the very old and the very young, morphin should be administered with very great caution.

4. Whenever morphin is administered the anesthetist should maintain a lighter narcosis than when this drug is not administered.—JAMES T. GWATHMEY in the *J. A. M. A.*

THE USE OF FLUORESCENT SALTS (EOSIN, SCARLET RED, ETC.) IN THE PRACTICE OF SURGERY.

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The property of the fluorescent substances (as the chinin derivatives, fluorescin, neutral red, acridin, eosin, scarlet red, erythrosin, Rose bengale, etc.), of destroying bacteria has long been known, but only little application of these facts has been made in the practice of medicine.

The interesting studies of v Toppeiner and Jesionek, of Noguchi and Flexner, induced us to experiment with the application of eosin and scarlet red in various surgical and medical afflictions. It has been shown that certain fluorescent substances, *e. g.*, eosin and magdala red are inimical to the growth of many fungi. Many bacilli are acted upon in a similar way and in the presence of sunlight. Rats are rendered immune against tetanus by being treated with eosin (Noguchi). Von Toppeiner reduced the power of diphtheria toxin by exposure of the poison to eosin and sunlight. The toxicity of certain snake poisons, as that of cobra, daboia and crotalus, is diminished by eosin and erythrosin and exposure to sunlight (Noguchi). Injections of eosin, erythrosin or Rose bengale into the shaved skin of the ear of a rabbit, and exposure to light, produces inflammations that may result in necrosis and exfoliation (Noguchi). Von Toppeiner as early as 1903-1904 experimented with eosin, applying it by various methods to neoplasms and parasitic afflictions of the skin, afterwards exposing the parts to the sunlight. He also injected it into the tissues. During the last year we have made extensive use of eosin and scarlet red in pus infections and large skin defects, both on man and animals, especially rabbits and dogs. Ulcerations were artificially produced, and the infected area was treated by the application of a 5-10 per cent. aqueous solution of eosin. The animal treated with eosin always recovered rapidly, while some of the control animals even died from the infected wounds; the eosin animals were always kept in direct sunlight, while those who were kept in dark boxes always showed delayed healing. The method of application is simple enough. The wounds are painted with a 5-10 per cent. aqueous solution of eosin, covering it at once with a thin layer of cotton to exclude dust, and exposed at once to sunlight; the wounds were thus treated daily.

We have employed the eosin solution in conditions like stitch abscess; in suppurating incised wounds; after operations for osteomyelitis; in infected joints; in several cases of eczema; in several cases of gonorrhea, injecting the eosin into the urethra, and keeping the solution in contact with the mucosa for at least half an hour.

In several cases of actinomycosis (and actinomycosis is fearfully prevalent amongst the cattlemen in Mexico) we injected a 5 per cent. solution of eosin into the affected parts, at the same time giving sulphate of copper internally in doses of gm. 0,008 t. i. d. p. cib. There usually followed a rapid breaking down of the affected tissues, forming a crater, which was painted with eosin; when the wound was clean it was finally treated with scarlet red to promote epithelial growth. We have also seen a few good results following the use of eosin in tuberculous affections of the skin and tendons. In the treatment following removal of the turbinated bones and in infections of the nose and antrum of Highmore, there was astonishing success. In cases of endometritis, the endometrium is first swabbed with formalin (40%), dried thoroughly and then treated with a 10 per cent. solution of eosin. The results have been uniformly good.

In carcinoma of the uterus, mammae and the face and neck, we have employed it by injecting it into the substance of the tumor and painting the surface of the growth. In uterine cancer, especially, extensive separation of the cancerous masses took place; curetting was then practiced with application of more eosin and acetone (to remove the odor). We also employed it in infected inguinal glands by making a minimal incision, removing the infected material and painting the abscess cavity with eosin, and then filling it with gauze moistened with eosin. The cases of bubo treated in this manner healed faster than those treated with nitrate of silver.

It is not necessary to fill up this article with histories of clinical cases, as a short trial of the remedy will soon show its value.

We have also experimented with scarlet red, employing it suspended in olive oil, vaseline, or together with ung. zinci oxidi (in a 5-10 % proportion).

Schmieden has demonstrated that, injected into the tissues, scarlet red produces atypical epithelium which may even simulate carcinoma. He thinks the action is evidently a chematactic one. On the other hand, Werner, experimenting with scarlet red on mouse tumors, thinks that the cell proliferation is not the result of chematactic action, but from cell irritation, as the proliferation always occurred

away from the point of injection and never *in loco;* this seemed to prove that the cells are not attracted to the dye. For further studies on the action of dyes and chemicals on the cells see page 404, Ehrlich's work on Immunity (translated by Dr. Baldwin, N. Y.) on *"The relations existing between chemical constitution, distribution and pharmacological action."*

For the employment of scarlet red, the wounds should be thoroughly dried, and the salve applied in not too thick a layer; this remains from twelve to twenty-four hours, when it is removed and covered with plain vaseline or olive oil. The wounds are thus treated every two or three days; though some patients can tolerate it daily.

We have treated enormous skin defects by this method and with good results. A large ulcer occupying all of the region over the spina scapula was healed in six weeks, having resisted previously all other treatment for more than two years. In this case, when not applying scarlet red, the wound was painted with eosin and exposed to the sunlight. Other large defects, as after mammary extirpations, extensive scalp wounds and ulcus cruris (with simultaneous saphenectomy) were readily influenced by it.

We employed it also in ulcerations of the nose. Most of the cases treated with scarlet red were treated on the "alternate days" with eosin.

The clinical material here in town is plentiful, being composed principally of nothing but excessively filthy Mexican Indians, so the sanitary surroundings are of but little help in the employment of the eosin or the scarlet red. That, in spite of much filth, we get uniformly good results, speaks for the value that there must be in the treatment. The non-toxicity of eosin and scarlet red permits their use in almost any place (in the eyes we have not tried it as yet; all the cases of ophthalmia neonatorum being treated with nitrate of silver or sulphate of copper according to long established rules). The applications can, if necessary, be entrusted to patients who live far away and are able to visit the physician but rarely.

Here we do not distribute the prescription for this remedy but prepare it in the hospital drug store.

Dr. Ortiz Sanchez, of this city, has been using eosin in the treatment of eczema of the face and axilla, painting the surface and exposing it to light; the results were all good.

The only drawback to these drugs is the property of staining the clothes coming in contact therewith; however, this is but a lesser evil.

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OPERATION FOR INGROWING TOE-NAIL.

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Ingrowing toe-nail is a chronic ulceration of the nail which requires for its relief the temporary or permanent removal of the irritating nail. This may be done by,

1. Trimming away the offending portions of the nail. This simple procedure is a favorite

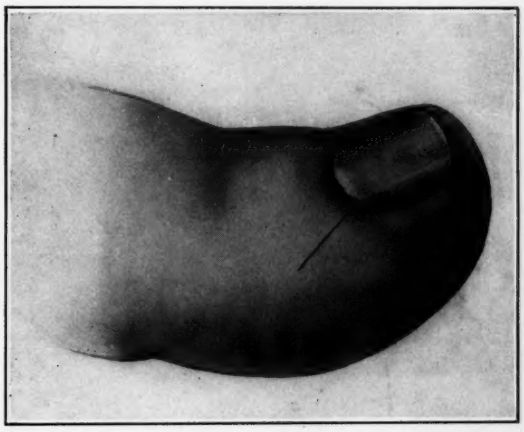

Figure 1.

method of the chiropodist and is successful in a large number of the simpler cases, but in those which deserve surgical treatment it is not enough.

2. By evulsion of the nail.

This will cure a fair number of cases, but in many the trouble will recur when the nail grows out again.

3. By various operations for removing the nail fold.

The objections to this type of operation is the fact that scar tissue replaces the nail fold and is hardly less susceptible to irritation than the tissue which it replaces.

4. Operations for removing the nail fold and part of the nail with the matrix on the diseased side.

This operation is open to the same objection as those of the preceding type, in that when healing has occurred scar tissue lies against the nail edge.

The operation here described leaves the nail fold

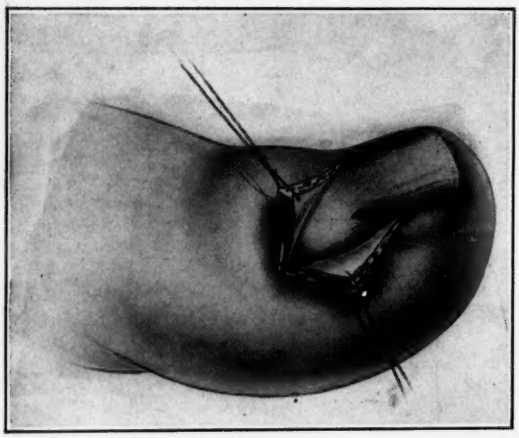

Figure 2.

untouched, but removes a portion of the matrix on the affected side and the nail either in part or entire. The operation as presented at the Brooklyn Surgical Society in 1904, has been in use by several of us at the Brooklyn Hospital since that time with what we consider better results than are obtainable by other methods.

The steps of the operation are as follows:

1. A rubber catheter is firmly tied about the base of the toe to serve as a tourniquet. The nail fold and the nail bed are rendered anesthetic by

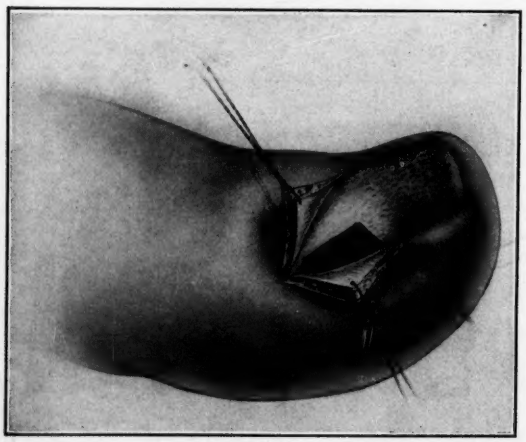

Figure 3.

the use of one-fifth of 1 per cent. solution of cocaine in normal salt solution.

2. The incision is made from the angle of the nail on the side of the disease, obliquely upward and toward the side of the toe, as shown in Figure 1.

3. The nail is removed by blunt dissection with the handle of the scalpel, care being taken not to damage any more than possible the underlying nail bed. The outer portion of the matrix is removed entire, retracting the flaps wider and going well down along the side of the toe so as to be sure that none of the matrix is left to form later on irritating spikes of the nail.

Step shown in Fig. 3. The wound is sutured, the tourniquet removed and if the hemorrhage does not promptly cease the little cavity left by the removal of the matrix is packed for twenty-four hours with iodoform gauze.

The wound should heal in a week or ten days. The nail bed will have lost its sensitiveness before this time. The nail should grow in from six to eight weeks.

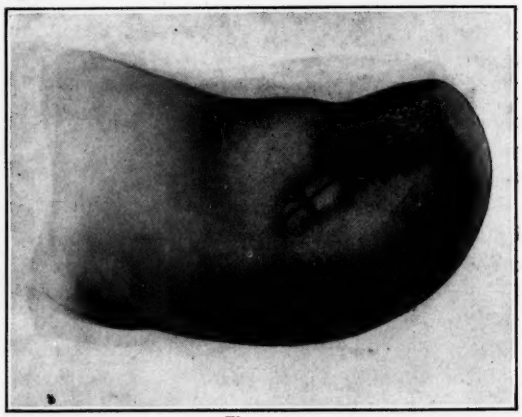

Figure 4.

This operation has the advantage that the nail will never grow again upon the side from which the matrix has been removed and that when once the source of irritation has been removed the nail fold is able to care for itself without surgery through infected tissues.

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A PLASTER AND IRON SPLINT.

Deffenbaugh describes the treatment of fracture of the shaft of the femur by long flexible galvanized iron splints, one inch and a half wide, and sufficiently long to reach from the waist to a little below the external malleolus. This split is attached to the outer side of the leg, and plaster bandages are applied over it. Deffenbaugh claims for this method that it is easily procurable, cheap, affords the best form of immobilization by plaster-of-Paris.—W. B. DEFFENBAUGH, *Journal of Missouri State Medical Association.*

SCAR TISSUE—ITS PREVENTION AND OBLITERATION.*

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A scar on the surface of the body is usually objectionable. The fear of a scar will often seriously influence the selection of the surgeon for an operation, other considerations to the contrary.

The operative technic outlined in this paper, while generally recognized as good surgery, has not been universally followed with the specific object in view of lessening the formation of dense fibrous connective tissue in the wound. Since there has been no specific object in view, or reasons for its employment, other than given above, there has been no unanimity in its adoption as far as the writer has been able to discover, either in hospital practice or in medical literature.

The post-operative treatment of wounds given here has been used only in a restricted sense for preventing scar tissue formation; just enough to establish some precedent for its use in the broader field of surgery here recommended. The contents of this paper are based upon a wide clinical experience of sixteen years' duration in which the formation of dense fibrous connective tissue in the wound was lessened or prevented.

The operative technic, aside from aseptic technic, materially affects the process of healing. It is this special technic with which we will deal in describing the methods of preventing, in a great degree, dense fibrous connective tissue formation in the wound.

A scar is the result or completion of the process of repair. When the process of repair is accompanied by *irritation* from any cause there is a resulting tendency to the formation of new dense fibrous connective tissue or scar tissue in the wound.

The absorptive powers of the tissues, the constriction they will tolerate by the sutures without necrosis, the subsequent swelling, handling of the wound, irritation with antiseptics and surgical dressings, or the hardening of clots, etc., must all be taken into consideration in eliminating irritation in the wound during the process of healing.

The writer believes there is dawning on the horizon of surgery an era where scar-free surgery will be practiced as faithfully and conscientiously as aseptic surgery is to-day.

That all irritation cannot be kept out of the wound is apparent from the nature of the case; but clinical experience proves that it can be reduced in all cases. In the majoriy of cases it can be reduced to such an extent that there will be little or no dense fibrous connective tissue following the wound.

The advantages of scar-free technic of wound treatment are:

1st. From a cosmetic point of view traces of the wound are minimized and often apparently obliterated.

2nd. There will be less tendency to the formation of dense fibrous connective tissue in the wound, consequently, less cause for pain or deformity.

3rd. There will be less tendency for that stubborn neoplasm of the fibroma type, known as keloid, to make its appearance.

SKIN INCISIONS.

Skin incisions should always be made with the object in view of permitting an exact approximation of the skin edges during wound closure.

In making the skin incision, the scalpel should be long and sharp, and should enter the skin at an acute angle. To do this, the scalpel is laid flat against the surface to be incised, and then tilted slightly towards the cutting edge, so that the flat side of the instrument makes an angle of 60° with the perpendicular.

The skin incision is made preferably with one downward sweep of the instrument. This divides the skin in such a manner that one flap of the wound has a very thin edge and rests on the other on the principle of a trap door. This enables a very accurate approximation of the skin edges to be made during wound closure. In preventing the formation of scars, accurate approximation is the keynote of all successful operations; therefore, accurate approximation in all wound closures, even at the sacrifice of normal tissue, must be followed.

Accurate approximation with no equivocation is the cardinal principle to which all other considerations are subservient. In removing a section of the skin for any cause, the plain of the incisions should incline at an angle of about 30° with, and on opposite sides of, the perpendicular, making the skin incisions approximate on cross section a triangle with its apex downward. This does not remove the appendages of the skin under the incision, but cuts through the ducts in such a manner that upon wound closure epitheliation is taking place in the line of the wound itself. Clinical experience does not in-

* Read at the regular monthly meeting of the Academy of Pathological Science, January 22, 1909.

dictate that pyogenic microorganisms which are supposed to be, at times, in these ducts or glands, give rise to infection if the surface is properly cleansed, but that the epithelia from these ducts spread out sufficiently in some instances so as to macroscopically obliterate the wound.

It is preferable to lengthen the incision in the healthy tissues on opposite sides, making the wound in the form of an oval, or preferably, an elongated ellipse, rather than a circular form, for a circular incision is not readily closed with accurately approximated edges.

The rules for healing contractures of the skin flaps should be scrupulously followed. The best operative results, as pertaining to the scar, are obtained where the skin is loosely attached to the underlying tissues, as in operations in the fold of the elbow, or knee, or for the removal of bags under the eyes. Where the skin is more adherent to the deeper structures, as over the deltoid muscle or on the cheek, it is more difficult to cover denuded areas with exact approximation during wound closure; although with the precautions given later, the surface of the body is usually operated anywhere with impunity, with little or no scar following.

When an incision is made in adipose tissue, as after the operation for the reduction of a double chin, a horse hair drain is inserted at the lowest part of the wound and should remain for 24 hours. The drain is for the purpose of removing the liquid oils and fats that accumulate in the wound, which will undergo fermentation unless removed. When a drain is used, a single loose stitch is placed at the drain opening. This is not tied until the drain is removed.

There must be little tension on the skin sutures. In operations on the face, mattress or staple stitches of No. 1 plain gut are placed subcutaneously. Shepherd's crooks are now placed in either end of the wound, and the skin edges are approximated accurately with No. 1 silk and No. 9 surgeon's needle. A knot is never allowed to remain over the line of incision. The stitches are very close to the edge and one-eighth of an inch or less apart. The catgut sutures take the tension. The skin sutures merely hold the skin in approximation. With proper tension on the skin sutures there will be no constriction anemia or sloughing in the skin edges, and the capillary hemorrhage will be controlled. After the wound is closed, there is more or less oozing for about 24 hours. This oozing should be protected from dust floating in the air, for the serum offers a fine culture medium for bacteria.

It is not desirable to put gauze on the face to catch the seepage, and clots must not be allowed to form, for reasons given later. To protect the wound, it is sealed with flesh colored silk isinglass plaster. This is removed in 24 hours, when it is found that all clotting of blood that occurs during the interval comes away with it. In removing the plaster, it is a good plan to moisten it with a warm solution of bichloride of mercury 1-10,000. This will soften the plaster and allow its easy removal. The plaster is so removed that there will be no tendency to lift up the thin edge of or to pull the open wound. The wound is now thoroughly cleansed of all clots and exudations with warm bichloride of mercury, 1-10,000.

On other parts of the body the stitches need not be placed so close together. If infection occurs put in a drain, and treat it as a suppurating wound, in the usual manner. After the pus has cleared, it is treated in the following manner. The step, after the wound is closed, is most important, and has a range of application in nearly all branches of surgery, where the reduction of dense fibrous connective tissue is of paramount importance.

WOUND DRESSING TO PREVENT DENSE FIBROUS TISSUE FORMATION.

A proper understanding and application of the principle of wound dressing to prevent scar tissue formation is one of the unique features of facial surgery. A proper dressing should be used, when possible, in all branches of surgery where the integrity of the skin has been interrupted. Kirk's handbook of Physiology says: "The clotting of blood is due to the development in it of a substance called fibrin, which appears as a meshwork of fine fibrils. This meshwork entangles and encloses within itself the blood corpuscles. The first clot, therefore, includes the whole of the constituents of the blood in an apparently solid mass, but soon the fibrinous meshwork begins to contract and the serum that does not belong to the clot is squeezed out. When the whole of the serum is transuded, the clot is found to be smaller, but firmer and harder, as it is now made up chiefly of fibrin and blood corpuscles." If there is no coagulation, there is no fibrinous contraction enclosing blood corpuscles. In other words, in wounds where the skin edges approximate accurately, and where coagulation does not take place there will be:

1st. No fibrinous contractions of clots of blood over the wound.

Then from this cause there will be:

2nd. No interference with the epithelia spreading from the edges to cover the wound, which they will do, more or less if the wound is unirritated.

3rd. No plugging of the ducts of the suderiferous and sebaceous glands with clots to interfere with the proliferation of epithelia from these sources.

4th. No irritation to the wound.

5th. Since dense fibrous connective tissue is caused by irritation there will be no dense fibrous connective tissue.

6th. Hence no contractions.

7th. No pain.

8th. No deformity.

9th. No keloids.

Most scars that result from a superficial injury are caused directly from blood clots that were allowed to form over the wound.

Kirk also says: "Coagulation is hindered or prevented by the application of oil." The technic of this third step of the operation is, to gently wipe away all oozing at every dressing and keep the wound immersed in some heavy non-irritating oil. Cold cream is used on the face. This prevents the clotting of blood and therefore of irritation to the wound from this cause, and therefore the formation of hard cicatricial tissue. The wound is kept immersed in this oil until healing takes place.

Never put a bandage on the face. On the other parts of the body not exposed, it is the practice to spread on the gauze covering the wound a mixture of beeswax and vaselin, one ounce to the pound. These are melted separately and mixed. The wound is covered with sterile vaselin, and the mixture on the gauze is laid over this. The heavy mixture keeps the vaselin from being absorbed by the dressing, and eliminates the irritation caused by the gauze adhering to the wound, of clots forming in the ducts of the skin appendages, a source from which epithelia should spring to cover or bridge over the denuded area. This dressing is cheap, easily sterilized by heating, keeps well and absolutely keeps blood clots from forming.

The treatment here described is not without precedent, however, for it is the exception to-day to find a face with small-pox pittings. This is due largely to the application of oil, which is almost universally used during the progress of the disease. The successful treatment of burns is that of oil. The success of the featural surgeon's treatment of wounds has been largely that of carrying out this oil treatment of wounds to the limit of possibilities, in this direction.

Wounds should be dressed in oil daily to keep them absolutely free from blood clots. The stitches should be removed as early as possible, for they act as foreign bodies, and set up irritation. The surgeon should use his judgment in this matter, basing it on the tension originally needed to close the wound properly. Where the skin is loosely attached to the underlying tissues, and there is little or no tension needed in wound closure, or where the skin sutures are merely employed to approximate the skin edges, they may be removed in five days. After the wound is healed, should there be any scar, it is treated as a scar.

For the purpose of removal all scars are divided into three classes, depending upon the amount of dense fibrous connective tissue they contain. This classification is arbitrary, and is made for convenience in referring to them, for example:

Scars that come under class 1 contain only loose fibrous or myxomatous connective tissue. They follow deep injuries where the wound has been comparatively free from irritation from any cause. These scars are objectionable only from a cosmetic point of view, and are removed by plastic operation.

Scars of the second class occur after superficial injuries. They contain myxo-fibrous and a small amount of dense fibrous connective tissue. These scars are objectionable from a cosmetic point of view and are removed by carbolic acid.

Scars under class 3 contain only dense fibrous connective tissue, they follow deep injuries, where irritation is maintained in the wound, and this is the class of scars that is so objectionable from every point of view. They are unsightly, painful, and often result in keloids.

Between these various classes there are scars that contain an intermediate amount of dense fibrous connective tissue, one class merging into the other. The diagnosis and treatment of any class of scar must be based on experience and judgment that can only be acquired by wide clinical observations.

The class of scar depends, in a very great degree, upon the depth of the injury received to produce the scar. So, in a given scar, we are able to tell, in a degree, the depth of the injury.

Epidermization or repair of the epidermis is brought about by:

1st. Proliferation of the epithelia around the wound margin.

2nd. Proliferation from any part of the Malpighian or lower layer of the epidermis that may be left.

3rd. Proliferation from the skin appendages, the sebaceous and suderiferous glands.

The sweat and oil glands usually penetrate below the epidermis into the derma or true skin, and if it is desired to select an arbitrary point below which there can be no regeneration of the epidermis,

we must select a point below this zone. For the sake of reference, we will call this the *epithelial zone.*

We shall define a superficial injury as one not deeper than the epithelial zone.

A deep injury is one occurring below the epithelial zone.

When the process of healing after a superficial injury is not interfered with in any way, the proliferating epithelia spreads over the denuded area without a resulting scar. If, however, the process of healing is interfered with, either by organized blood clots forming over the area of the wound, or irritation is maintained in the wound by the dressings or by faulty operative technic, etc., the formation of dense fibrous connective tissue will result and will interfere with the spreading of new epithelia from the epithelial zone. The result is, therefore, a conflict between the proliferating newly formed epithelia, and connective tissue cells. Around each duct, as a focus, new epithelia make their appearance. Between these a little dense fibrous and myxo-fibrous connective tissue is observed and the surface becomes irregular. This is a scar of the *second degree.*

Following a deep injury, healing takes place in a very different manner. There is no zone from which epithelia spring to cover the denuded area as in superficial injuries. The epithelia needed to cover a deep wound must come from the periphery. This they will do if the wound is kept free from clots, by being dressed in oil. They will creep in from the edges, and at times cover quite a large surface of denuded area. In a deep wound there appears to be a limit to the distance the epithelia can traverse inward from the edge. When they do not meet the epithelia from the opposite side, the space between must heal by granulation.

The best result following a granulating surface is obtained if the integument over the site of the injury remains soft, flexible or pliable. Even extensive deep wounds will tend to, and often do, heal in this way if unirritated. The scar will then be of the *first class.*

Deep wounds, of small external area, if unirritated, will often heal by the epithelia bridging over them from the edges with no perceptible scar remaining, as after needle punctures. When there is irritation in a deep wound, there is a tendency to, and there usually does, form only dense fibrous connective tissue, or a scar of the *third class.*

Irritation may frequently be kept out of a deep wound to such an extent that there will be no dense fibrous connective tissue present whatever.

Infection is one of the chief sources of irritation in a wound. Irritation is maintained in a wound by too great a tension of the skin sutures, causing constriction anemia, and a cutting into the tissues

Irritation is maintained in a wound when there are insufficient skin flaps, for during the process of healing, and the contractions and swellings that follow, there is too great a tension on the sutures. This will set up an irritation that will cause a proliferation of new dense fibrous connective tissue.

During wound closure there are times when it is only possible to obtain enough skin flap to close the wound, and not sufficient to keep the wound closed during the contraction that takes place during the process of healing. Under these conditions good results have attended the application of ice and glycerine temporarily. These will tend to reduce the inflammation until primary union takes place.

Whenever there is even a small amount of tension on the skin sutures adhesive plaster is placed on either side of the wound, and the two flaps are drawn together by means of tape, laced in holes in the edge of the plaster.

Irritation is also maintained in the wound by improper selection of the size of the sutures, or in attempting to control bleeding points with ligatures when other means would answer the purpose equally well. The ends of the vessels and ligatures left in a wound will act more or less as foreign bodies and set up an irritation in the wound. Irritation is maintained in the wound by improper handling, by bruising or wiping the tissues; by the dressings becoming adherent to the wound, and the consequent removal of healthy granulations at each dressing, or by rubbing of the dressings. Irritation is again maintained in the wound by the too long or too strong use of antiseptics. Immobilize the parts when muscular action will interrupt the adhesive process during the progress of repair. Irritation also occurs in the wound by the formation of blood clots over the incision.

A clean incision with a sharp scalpel causes the least amount of irritation. Closing a wound promptly causes less irritation than where the wound is exposed to the air for a longer period of time. Irritation is maintained in a wound by blunt dissection, or a tearing of the tissues. In a wound of this nature an anastomosing of the smaller vessels, nerves, etc., is not so liable to occur as when the wound is incised with a sharp instrument.

While it is not possible to keep irritation out of the wound from all of these several sources, yet it is possible for us to endeavor to keep it out, and by

so doing reduce the relative amount of dense fibrous connective tissue.

When a wound is septic in character stimulation of the tissues is often necessary. This is always at the risk of stimulating the connective tissue cells to the proliferation of new dense fibrous connective tissue in the wound.

The oil treatment is universal in its application to all wounds and granulating surfaces, and should be employed wherever possible.

The pink color, characteristic of newly formed dense fibrous connective tissue, is due at first to the newly formed cells, and later to the irritation set up by the contractions that invariably occur, in direct proportion to the amount of dense fibrous connective tissue present in the wound.

SCARS UNDER CLASS ONE.

Scars under class one contain only loose fibrous or myxomatous connective tissue. They are flexible, pliable, and free from pain. The covering is thin, transparent, skinny, and often slightly adherent to the deeper tissues. Tiny vessels are often seen coursing through them. They follow deep burns, surgical operation, or deep injuries, where a considerable area of the epidermis has been removed and when the wound has been comparatively free from irritation from any cause. These scars are only objectionable from a cosmetic point of view. Scars of this class are removed by plastic operation.

Proscribed skin incision for the removal of scars under class one do not produce the best operative results. Very often considerable ingenuity, obtained by experience, will have to be displayed in selecting the form of incision that is best adapted to the individual case, in allowing the wound to close without the edges on either end forming bunches or buckles of tissue between the skin sutures.

Generally speaking, the incision should be an elongated ellipse, or oval shaped, with more or less pointed ends. Even if it should require two or three operations to remove the surface desired.

With a sharp scalpel an incision is made around the scar, about a line's breadth into the healthy skin. An edge of the enclosed skin is carefully dissected loose with a sharp scalpel, care being taken to cut close to the skin. When the area of the skin is large, and it is apparent that we will not be able to approximate the skin edges properly in one operation, we must resort to either one of two methods of procedure, viz: the plastic flap method of wound closure, or making the removal a two stage operation. In the plastic flap operation a sharp scalpel is run under the skin on each side of the wound up to two inches, to suit the needs of the case, loosening it from the deeper structures. This will often allow the skin to stretch sufficiently to be drawn over quite a large surface of the denuded area.

When the area is too large to be covered by this method, we must resort to the two, and sometimes three, stage operation, that is, removing one-half of the scar and allowing it to heal, then removing the other half at another sitting. The dressing of this wound is the same as that for the prevention of dense fibrous connective tissue formation. Very often, in scars of this class, the principle objection lies in the fact that its surface is crossed throughout by bright red bloodvessels. These vessels may be obliterated, and the whole color of the scar changed by the use of the Galvanic needle.

SCARS OF THE SECOND CLASS.

Scars of the second class occur after a superficial injury. They contain myxo-fibrous and a small amount of dense fibrous connective tissue. Dense fibrous connective tissue is the direct result of irritation.

In a superficial wound we can eliminate many of the sources of irritation that would likely occur in a deep injury.

For practical considerations the main sources of irritation in a superficial wound may be reduced to:

1st. Blood clots.

2nd. Dressings.

THE ACTION OF THE BLOOD CLOT ON THE WOUND.

When the whole of the serum is squeezed out, the clot is found to be firmer and harder. The corpuscles enclosed by the fibrin, the firm, hard part, is sealed to the wound surface by the serum. That the blood clot is the main source of irritation to a superficial wound is born out by the fact that practically the only superficial injury that results in a scar is that over which a blood clot is allowed to form. When a blood clot is not allowed to form, by dressing the wound with the beeswax and vaselin preparation, there will be no scar following a superficial injury. The serum which often soaks in the gauze dressing and causes it to adhere, is a contributing factor to the irritation.

Scars of the second class result from:

Smallpox.

Acne vulgaris.

Superficial scratches.

Burns of the first degree.

Improperly dressed surgical wounds, and any kind of superficial ulcerations.

For the removal of scars of this class carbolic acid is employed.

Removal of Scars Under Class Two.

The U. S. Dispensatory says:

"Carbolic acid in the liquid form is locally, powerfully irritant and anesthetic, and applied undiluted to the skin causes a sharp pain followed by numbness, and accompanied by a whiteness of the surface due to the coagulation of albumen. It produces a superficial caustic effect." When an undiluted application is made to the skin the superficial layer or corium becomes necrosed or destroyed.

The albuminate formed by the action of pure carbolic acid on the tissues protects the deeper structures, acting as a wall or barrier checking deeper penetration, thus making its action superficial and therefore not liable to be absorbed. It is on account of these peculiar properties that it is singularly adapted as a destroyer of superficial tissues, such as scars under class two. If it is applied continuously, the penetration is deeper, the granular and mucous layers are broken down and more or less dense fibrous connective tissues will result, unless the precautions given under the "Technic of its Application" are rigidly followed. After a single application it leaves a local redness or hyperemia of the skin lasting six or eight weeks.

The application of carbolic acid for the removal of each of the scars above mentioned, is practically the same. It is the aim to remove all the superficial tissue in and around the scar. Often it is necessary to make two and sometimes three applications, the second and third following as soon as the one preceding it becomes dry, and this remains for three days before the dressing is applied.

Technic of the Application of Carbolic Acid for the Removal of Smallpox Pittings on the Face.

A small pleget of cotton on an ordinary cotton carrier is dipped in pure liquid carbolic acid, the acid is applied to the scar and skin immediately around it. The surface becomes lighter, the whiteness depending on the amount of acid used. When this becomes dry, one or two applications are made directly to the scar itself. The aim is to get the most acid where the fibrous connective tissue is the densest, and the lesser amount where the skin is practically normal. It is necessary to have some acid over the adjacent normal tissue, so there will be no sharp, well defined line of demarcations between the part the acid touches and the part where the acid does not touch. In smallpox pitting the whole face is covered with the acid uniformly, care being taken to keep it from the eyes, as the upper lids are covered with the acid. The outer edges, where there is no pitting, as on the neck and ears, are blended in the manner above described. Of the technical points that justify the procedure the most important concerns the dressing that is used after the application of the acid.

When the acid becomes dry, the whole area is covered with adhesive plaster. This is cut with the scissors so that it presses on every part of the skin where the carbolic acid has touched. This plaster is removed in form two to three days depending on the depth of the scar tissue, or, in other words, on the depth to which we wish the suppuration to extend, although on tender babies' skin, it is the custom to remove it in twenty-four hours. When the adhesive plaster is removed, the epidermis comes with it. The surface is in active suppuration, that is, covered with pus. This paradoxical procedure of the surgeon, purposely causing pus, is so diametrically opposite to the surgeon's orthodox creed, that it may seem like the concrete essence of boldness. This is boldness, but it is boldness born of expert experience extending through many years, covering thousands of cases. That it is opposed to textual teaching is well known and carbolic acid gangrene is often seen in hospital practice to substantiate the wisdom of this teaching. But actual demonstration in the use of carbolic acid on the face in the manner described, stands above all theory or logical demonstration, for not a single case has been reported where gangrene of the face followed the application of the acid in this manner, and it is being used continuously, and has been for sixteen years.

When the plaster is removed, the surface is thoroughly cleansed with bichloride of mercury 1-10,000, and no watery solution is again applied. From this time on the beeswax and vaselin preparation is kept constantly applied, till the skin assumes a normal texture. From the epithelial zone new skin spreads rapidly, till, at the end of six or eight weeks, the normal color of the skin appears minus the scar.

The perfection of this method of removing scars has been paved with law suits, owing to the refusal of the patient to believe that the discolorations caused by the carbolic acid were only temporary. But, invariably, when the physicians have succeeded in having the case postponed for three months, it has been thrown out of court, for by this time the discoloration has disappeared as well as the scars.

Scars Under Class Three.

Scars under class three contain only dense fibrous connective tissue. They follow deep injuries, where irritation is maintained in the wound, and are the

class of scars that are so objectionable from every point of view. A recent cicatrix of this class is redder, firmer, less pliable and less yielding than the surrounding parts. After a course of time it becomes flexible, pliable, and easily movable, losing its adhesion to the fascia and bone in many cases. It often assumes a pearly whiteness.

Scars under class three contain no papillæ, nerves, lymphatics, muscular, or glandular tissue.

They may be either level with the adjacent tissue, elevated or depressed.

If the technic given in this paper for the keeping out irritation of deep wounds is followed there will always be a markedly less amount of dense fibrous connective tissue. Under favorable conditions this is practically negative. Cases are numerous where there is no dense fibrous connective tissue whatever. A thin line scar is easily removed by carbolic acid.

REMOVAL OF SCARS UNDER CLASS THREE.

Scars of this class may be removed by operative procedure, as are scars of class one, but, in class three, the incisions are deeper. The incision should go through the skin and must be wide enough to include all of the dense fibrous connective tissue, and deep enough to allow the skin to be drawn over it. The deeper tissues are not so elastic as the superficial, and consequently the difficulties in accurately approximating the skin edges are greater. The sliding flap method of wound closure must often be used, and the two stage and sometimes three stage method of operation must be resorted to. The dressing of the wound is the same as after all the surgical operations.

This operation is often followed by a depression, especially if the scar is extensive. When this is so, the hollow may often be filled to the required level with paraffin, but this is a subject that will not be discussed at present.

There are a number of adjuvant treatments that will materially aid us in lessening the amount of dense fibrous connective tissue in a scar, even though it be of long standing, which will greatly improve its appearance.

In scars of the third degree that are raised above the surrounding skin surface, it is the practice of many, and especially of those who are not physicians, and therefore not allowed to treat them surgically, to burn off the superfluous dense fibrous connective tissue with nitric acid, or in some instances with aqua-regia. Ordinary bicarbonate of soda is employed as a controlling agent after the application of the acid to prevent deeper penetration. The wound is kept immersed in oil till healing takes place, when the resulting scar is found to be soft and minus fibrous connective tissue.

In a small scar of the third degree, as from a stitch, or a line scar, the treatment of carbolic acid as described above is all that is necessary in many instances to completely obliterate it.

In removing a scar, one will often encounter the peculiar phenomenon of not being able to sear the skin with the carbolic. I have applied pure carbolic daily for six days, and covered each application with adhesive plaster, with no evidence whatever of the acid on the skin except a slight hyperemia. The reason for this is that the scar had been previously soaked in oil. It is well to pause here and state that before applying carbolic acid for the purpose of searing or blistering the skin, the skin should be previously thoroughly cleansed with green soap, ether and alcohol, for the purpose of removing the oils and fats that prevent the acid from attacking the skin. In a big scar it is the custom to apply pure nitric acid to the scar for about five seconds, then apply bicarbonate of soda in the powder directly to the acid, then dress in oil in the manner already described.

Denuding a scar and the adjacent skin by carbolic acid and dressing it with oil allows the epithelia to spread out over the scar from the periphery. After a line scar has been treated with the acid, and the application of oil is being made, it is very beautiful to see the skin gradually bridging over the line from the edges first in one place, then in another, and so on till the whole scar is covered with new epithelia. If in any place the epithelia fail to completely bridge over the denuded area from each side, blister that place again and treat with oil in the same manner. Linear scars one-quarter of an inch or more in width are greatly improved, and scars one-eighth of an inch or less in width have apparently been obliterated.

Scars of the third class are poorly nourished. In time the bloodvessels in the immediate vicinity cause more or less absorption of the dense fibrous connective tissue, and the scar becomes softer. The absorption may be hastened by causing a mild congestion around the scar in the immediate vicinity.

The galvanic current will do much towards softening and absorbing dense fibrous connective tissue. Dr. William Harvey King says: "The treatment consists of a combination of negative punctures and dry cupping. First, all the contracting edges should be punctured with a fine needle connected with the negative pole. We depend as much upon the cos-

metic effect by the setting free of bubbles of hydrogen, etc., to break up the tissue, as we do upon the formation of new tissue. After a scar has been scarified in this way, a dry cupping instrument is placed over it and slight suction made. This is for the purpose of drawing blood to the parts, which increases the size of the vessels, and consequently increases the nutrition to the parts. At first this treatment may be given once a week or even oftener, and as the scar improves, the intervals may be lengthened until once in three months may be sufficient to keep the scar thoroughly suffused with blood."

The writer uses massage, vigorously applied, after electricity, with good results. There have been reported numerous examples where vibration alone has succeeded in causing dense fibrous connective tissue to be absorbed.

PREVENTION OF KELOIDS.

In all newly formed dense fibrous connective tissues, as in scars of the third class, contractions take place, often causing pain. In many instances these contractions are of sufficient force as to cause the inelastic connective tissue fibers to separate. In many cases where irritation is maintained in the wound, the formation of dense fibrous connective tissue does not stop at the point necessary for complete union, the normal balance in the different tissues comprising the structure around the wound is disturbed, there is a hypertrophy of connective tissue, a new growth of the fibroma type, or what is commonly known as a keloid.

After a complete excision of a keloid, there is often a recurrence. Following the excision, there is a formation of new dense fibrous connective tissue and there are the same conditions prevailing then that were present before the excision, contractions taking place as before, and we say that there is a recurrence of the keloid.

The amount of dense fibrous connective tissue there is in a scar is in direct proportion to the amount of irritation there was in the wound, and, as keloids have their origin in dense fibrous connective tissue, keloid formation, will be in the same relative ratio.

Dr. William Harvey King says: "In hypertrophic cicatrices (keloids), Drs. Derville and Becue in a number of cases have had good results from the static spark. The seance lasts from five to ten minutes, and is repeated every fortnight. Three or four treatments in recent cases bring about softening and a diminution of elevation."

In the writer's mind, fibrolysin has given good results when injected in the immediate vicinity of dense fibrous connective tissue. It improves the scars perceptibly, as regards both the color and texture. In six cases the cicatricial tissue became softer, and when coupled with massage, it approached, in about two months' time, a scar of the first degree.

This preparation is put up in ampules containing thirty-five minims. The contents of one of these ampules is hypodermatically injected daily. After the second or third injection, a perceptible change is noticed taking place in the scar. In the hands of others, it has succeeded in having marked effect upon keloids.

One case that illustrates the effect of fibrolysin is that of an extensive keloid that followed a burn, and was reported by Dr. Robert T. Brennan, of the New York Polyclinic, some weeks ago.

E. D., aged sixteen years; occupation, delivery boy; family history negative; personal history, has had the customary diseases of childhood, otherwise well. Christmas Day, 1905, the patient was impersonating Santa Claus; he was dressed in the usual apparel for such a part, including a long white beard. During his masquerading the false beard somehow caught fire, and before he could extinguish the flames and remove what was left of the beard, he was terribly burned. The patient was taken to Flower Hospital for treatment, and was dismissed cured two months later. He was brought to Dr. Bodine's clinic in November, 1907, for the removal of the tissue that had formed from the burn. A diagnosis of keloid was made and injections of fibrolysin recommended.

Fibrolysin is a solution of thiosinnamin and sodium salicylate. One tube in used at each injection. The injection is made into the tumor itself, with an ordinary Pravaz syringe. The injection can be made as often as necessary. In this case one was made each week until twenty-four had been given, with the following results: *The keloid tissue sloughed, broke down and ulcerated, and what remained was absorbed.* The injections given in this case were quite painful.

Long before thiosinnamin was used, it was known that sodium salicylate taken internally, had a marked effect in the resolution and absorption of dense fibrous connective tissues. It is used now internally by many oculists when dionin is instilled into the eye, to absorb scars following corneal ulcers. A good method of administering sodium salicylate is in from twenty to thirty grains in an aromatic solution, from three to four times a day. But when the patient is taking thiosinnamin, we do not give it, as it is one of its ingredients.

The above is often alternated every other week with potassium iodide, grs. x after meals.

The technic outlined in the paper is particularly adapted to the treatment of stumps. It is the writer's experience that if it is used there will be little

dense fibrous connective tissue in the stump, not sufficient to cause contractions enclosing nerve filaments, consequently no post-operative pain from this cause, nor keloids. Pain does not always, but frequently, occur in a stump. When pain, without pressure, does occur in a stump, it is on account of the dense fibrous connective tissue present. The technic outlined in this paper tends to reduce the amount of dense fibrous connective tissue in the stump, and makes it possible for the patient to use an artificial limb earlier.

BURNS AND SUPPURATING SURFACES.

It is not the province of this paper to speak of the treatment of burns, except insofar as it applies to the prevention of dense fibrous conective tissue formation, but as the treatment of burns is almost analagous to the methods employed for other purposes described in this paper, a slight digression is made in this direction.

It is pointed out above that the action of pure carbolic acid is anesthetic and superficial, and that the albuminate forms a barrier preventing deep penetration, and when it is applied in the manner given below, absorption may be considered negative. If carbolic acid is applied undiluted to a burned surface on a small cotton swab and followed in about five seconds by alcohol in the same manner, it will take away the pain from a burn immediately and permanently. After this keep the wound immersed in oil.

The oil treatment is particularly well adapted to suppurating surfaces. It is recommended especially, aside from the fact that it prevents clotting, and consequent irritation from this cause, because the beeswax and vaseline preparation lends itself readily as a medium for holding or conveying to the surface any medicinal preparation the surgeon may desire, or think necessary in the individual case. A thin, oily medium is not as well adapted for this purpose as the beeswax and vaseline preparation for the thinner oils, as vaseline, for example, melt at the temperature of the body, soak into the dressing, and allows them to adhere to the wound.

The old familiar caron oil, that is so universally used in hospital practice, would answer the purpose very well, if there were added to it during the first few days of its administration, or until after the pus had disappeared, the medicinal preparations spoken of above. Then, if it was applied properly and often enough, better results, as regard to dense fibrous connective tissue, would in all probability follow.

A preparation that has given good results in the hands of the writer may be made at a very small cost, and may be used in all cases of burns and surgical dressings for septic wounds, consists of:

Beeswax	1 to 2 oz.
Ichthyol	1 dr.
Balsam of Peru	1 dr.
Pulv. Alum	½ dr.
Petrolatum, q.s., ad.	1 lb.

The beeswax and vaselin are melted separately and mixed. When cool, the other ingredients are then mixed in thoroughly.

Apply to cheese-cloth or lint and lay lightly over burn, dress twice daily till the pus disappears.

Under this treatment the pus will usually disappear in from two to four days. After the pus has disappeared, dress in the plain beeswax and vaselin preparation daily until the red discoloration disappears.

Never put an antiseptic or a stimulating preparation or a healing agent in contact with a healthy granulating surface, for the vital forces of the patient that were sufficient to cause the healthy granulation to appear, are sufficient to heal the wound properly if irritation is kept out of the wound by the application of oil.

Never put anything on a wound but oil, in the manner above described, unless it is known to be unhealthy.

NERVE SUPPLY.

In all operations we should direct our attention to the muscular and cutaneous nerve supply. In operations on the abdomen this is especially true, since over this broad abdominal expanse there are no bony prominences except on the periphery, to give support to the enclosed area. The continuity of these parts is maintained only by the integrity and tone inherent in the tissues themselves.

Cutting the nerve supply robs the tissues of tone, nutrition, and stimulus, and often is the direct cause of the horrible herniæ we see at times following abdominal operations.

These nerves are often so small as to escape even a diligent search. It is not within the province of this paper to go into the manner of distribution of these nerves, but will only mention two of the larger ones that are at times encountered in the lower abdominal operations: The ilio-inguinal and ilio-hypogastric.

In conclusion, the writer would like to state that the technic of wound treatment given in this paper in no way interferes with aseptic technic, and when the two are used in conjunction, he believes there will be a nearer approach to the ideal toward which we all are striving.

233 LEXINGTON AVENUE.

AN ELECTRICALLY LIGHTED PHARYNGOSCOPE. A NEW METHOD OF EXAMINING THE NASO-PHARYNX AND LARYNX.

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Electric illumination of the pharynx is not a new procedure. Many instruments have been devised to give a better view of the posterior nares, Eustachian tubes and vault of the pharynx, among which may be mentioned the salpingoscope, electric tongue depressor and "cystoscope." All of these instruments have had but limited application.

The salpingoscope, for the inspection of the Eustachian orifices, was tried by many otologists and rhinologists but the image presented was not accurate and no exact pathological study could be made with it. The electric tongue depressor, especially the one in which the light is enclosed in a glass sheath, gives an excellent view of the oral cavity, but examination of the posterior nares with it is difficult unless the patient holds the instrument while the operator manipulates the post-nasal mirror. A modification of the cystoscope for use in the oro-pharynx and naso-pharynx was brought to the attention of the medical profession a few years ago. The instrument fell into disuse because its manipulation on the tongue gave rise to considerable gagging and closed off the naso-pharynx.

The technic of examination of the naso-pharynx and larynx by the ordinary mirrors is more or less of a simple procedure to one particularly trained in rhinological and laryngological work. However, even the most expert admit that examinations in this manner are not complete and that but a glimpse is obtained, particularly of the posterior nares and Eustachian tubes. Pathological studies of these parts have been impossible unless they have been well cocainized, and then the pathological picture is changed. Symmetrical examination of both sides of the naso-pharynx and of both Eustachian orifices has never met with any success; for the small post-nasal mirror admits a picture which is proportionately small. Adenoids, particularly in children, have been diagnosed mainly by finger examination, but a study of the adenoid, *in situ*, has not been possible.

On account of this difficulty in ascertaining the direct relationship of the various parts of the naso-pharynx, especially the Eustachian tubes, the author was led to devise the instrument described below (an earlier model of which was presented before the Otological Section of the N. Y. Academy of Medicine, April 9, 1909, and briefly described in the *New York Medical Journal* April 17, 1909).

THE INSTRUMENT.

The instrument consists of a vertical and a horizontal shaft joined (by screw-thread) in the manner indicated in Figure 1.

The vertical shaft serves as a handle and contains the wires for attachment to a Wappler Controller or other rheostat by which the current is regulated. These wires escape, as a cord, at the base of the shaft, which is flanged to provide a secure grasp. At its upper end the vertical screws into the horizontal shaft.

The horizontal shaft consists of a tube, bearing the optical apparatus, and, on each side, an electric

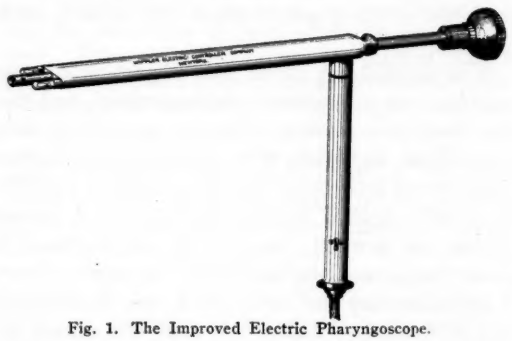

Fig. 1. The Improved Electric Pharyngoscope.

wire carrier, terminating, respectively, in a small, water-tight, tipless electric lamp. The inner two-thirds of the horizontal shaft is enclosed in a metallic sheath, so that a flat surface rests upon the tongue. The optical apparatus is the same as was devised for Otis' cystoscope. This telescope can be removed from its tube for cleansing. When the telescope is inserted the full distance, the lens, which has a focal distance of an inch to an inch and one-quarter, lies between and somewhat beyond the two lamps, and the eye-piece projects about three inches beyond the shaft. On the circumference of this eye-piece is a small metal ball to indicate, by its position, the direction in which the lens is at any time rotated.

The instrument is not sterilizable by heat, but, like the cystoscope, it is readily disinfected by pure phenol, followed by alcohol, or by formaldehyde. It may be carried in a tube containing formalin tablets.

THE INTRODUCTION.

The instrument is introduced like a tongue depressor. The patient is told to open his mouth wide, to breathe regularly and deeply and to keep the muscles relaxed. The pharyngoscope is carried

in until the end containing the lens is about one-sixteenth of an inch from the pharyngeal wall. (See Figure II.) The tongue is depressed, and the instrument is held firmly in place. Under no circumstances should it now be moved, for by so doing a reflex action occurs which entirely occludes the naso-pharynx. As soon as the instrument is once in position, the patient is told to *close his mouth* firmly over it and to breathe deeply through the nose. (See Figure III.) The muscles of the pharynx are thereby relaxed and the naso-pharyngeal space is widened.

When the lens points upwards (as indicated by the ball on the outer end of the instrument), an excellent view of the vault of the pharynx is obtained. By slightly depressing the handle, the posterior nares come into view. By rotating the eye-piece to the left or to the right, one can see either Eustachian tube with the Eustachian prominence and Rosenmüller's fossa. Any pathological condition of these parts is readily appreciated. A Eustachian catheter is easily seen *in situ*. In narrow throats both Eustachian orifices can be seen at the same time. By rotating the eye-piece until the ball points down, the larynx comes into view, with the epiglottis overhanging it, and the lingual tonsil and base of the tongue anterior.

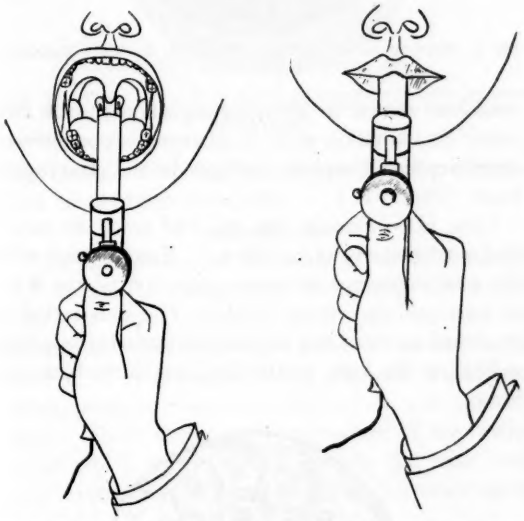

Fig. 2. Correct Position of the Pharyngoscope in Open Mouth. Note That the Tip is Behind the Uvula.

Fig. 3. Method of Inspection of Pharynx or Larynx with Mouth Closed. The Eye of the Examiner is Brought Close to the Eye-piece of the Instrument.

In the majority of instances, the patient's throat does not have to be anesthetized. An examination which lasts from ten to twenty minutes is not provocative of more discomfort than that due to the accumulation of increased saliva, caused by the presence of a metallic instrument. If there is any gagging, cocainization of the posterior pharyngeal wall is all that is necessary.

THE IMAGES.

The views obtained with the pharyngoscope are somewhat different from those seen with the mirrors now in use because the angle from which the view is taken is different. For example, in examining the naso-pharynx with the electric pharyngoscope, the posterior aspect of the uvula is enormous in comparison with the size of the posterior nares. (Figure IV.) As was suggested to the author, the same error is presented as one gets on looking at a high building from the street. In other words, the parts that are furthest away from the lens appear smallest. The Eustachian orifices also seem misplaced, as they appear nearer the vault than they actually are. When one inspects into the larynx, he looks *on top* of the vocal cords. The epiglottis, lingual tonsil and base of the tongue seem magnified and the larynx itself small in comparison. (Figure V.) This reduced image of the larynx is,

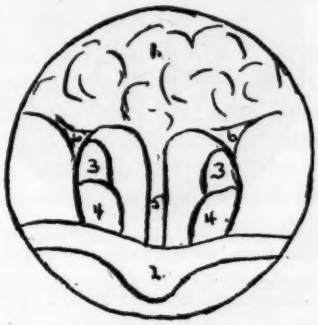

Fig. 4. Schematic Picture of the Naso-pharynx as Seen With the Pharyngoscope. (1) Adenoids; (2) Uvula; (3) Middle Turbinate; (4) Inferior Turbinate; (5) Septum; (6) Eustachian Tubes.

Fig. 5. Schematic Picture of the Larynx and Surrounding Parts as Seen With the Pharyngoscope.

however, an advantage to the extent that we see the vocal cords at rest, as well as in motion, and the pyriform fossæ and other surrounding structures come into the picture. After a few examinations

Fig. 6. Adenoids in the Pharyngeal Vault and Covering the Left Eustachian Tube. (Drawn by Dr. Percy Fridenberg.)

one easily accustoms himself to the various images and orientation needs but a little practice.

About fifty individuals have thus far been examined, some having normal throats and others presenting various abnormalities, among which were adenoids, hypertrophied turbinates, deviated septum, pathological conditions of the Eustachian tubes, various forms of pharyngeal catarrh, sinus disease with mucus in the vault, hypertrophied lingual tonsil, acute laryngitis, chronic laryngitis, etc. The examination in almost every instance, was easy.

Fig. 7. Granular Pharyngitis With Hypertrophy of the Lymphoid Follicles in the Vault of the Pharynx.

For purposes of demonstration it was often continued for twenty minutes.

Illustrative Cases.

Case I.—Female, age 24, came to the New York Eye and Ear Infirmary suffering from a chronic middle-ear catarrh. No definable cause in nose or throat, had been found. The left Eustachian tube could not be entered. Examination with the pharyngoscope showed an adenoid extending from the left Eustachian prominence and directly overhanging the tube, and a second adenoid situated directly over the upper portion of the septum. (Fig. VI.)

Case II.—Male, age 40, has been suffering from

Fig. 8. Showing the Eustachian Catheter in the Right Eustachian Tube. (Drawn by Dr. Percy Fridenberg.)

tenacious mucus in the pharyngeal vault for two years. Examination with the pharyngoscope showed hypertrophied lymphoid follicles in the pharyngeal vault. (Fig. VII.)

Case III.—Female, age 30, had an acute catarrhal condition of the middle-ear. Examination with the pharyngoscope showed congestion of the Eustachian orifices. (Fig. VIII.) The illustration is produced to show the Eustachian catheter in place, indicating the high position of the Eustachian orifices.

Fig. 9. Irregular Nares. Hypertrophied Turbinates. Deviated Septum. Adenoid Tissue in the Vault. Adenoids Obstructing Eustachian Orifices.

Case IV.—Male, age 18, had a catarrhal condition of the nose and throat for three years. Examination with the pharyngoscope showed a deflected septum, hypertrophied posterior ends of the turbinates, and adenoid tissue in the vault and over both the Eustachian tubes. (Fig. IX.)

Case V.—Female, age 20, with normal larynx. (Fig. X.) The illustration shows the apparent hypertrophy of the lingual tonsil and epiglottis. A distinct view of the anterior commissure is not obtained.

CASE VI.—Male, age 50, had acute laryngitis. Congestion of the parts was plainly seen with the pharyngoscope. The true cords were of a deeper hue than normal and the false cords and arytenoids very red. The false cords were plainly seen (Fig.

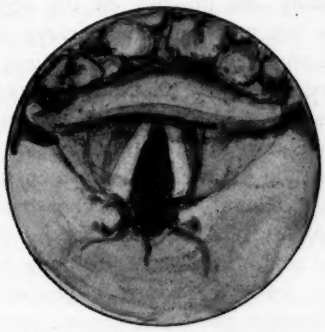

Fig. 10. The Larynx With Cords Abducted. Note the Apparent Hypertrophy of the Lingual Tonsil. (Drawn by Dr. Percy Fridenberg.)

XI) and on deep inspiration, the anterior commissure came plainly into view.

ADVANTAGES.

The examination of the entire throat by means of the electric pharyngoscope has many advantages over the examinations made by the ordinary instruments. *But one instrument is needed* for a clear view of the vault of the pharynx, Eustachian tubes, posterior nares, and the larynx, and adjacent parts. There is *but one introduction* of the instrument, which is held in substantially the same position throughout the examination of posterior nares,

Fig. 11. The Larynx With Epiglottis Raised in Inspiration. Note How Plainly the Anterior Commissure Can Be Seen. The False Cords Appear as Thickened Bands.

pharynx and larynx. The patient remains *in repose,* with *his mouth closed,* and is able to breathe easily. For examinations of the larynx, it is unnecessary for him to protrude his tongue.

The illumination of the field is excellent. The electric lights are of the high standard used in cystoscopes which admit a fairly strong current and are absolutely water-tight. They do not get hot, but just warm enough to prevent condensation of moisture on the lens. There is no more distortion of shades of color than is encountered with the ordinary head mirror.

One decided advantage of the pharyngoscope is that a view of the entire part to be examined comes into the field at one time; therefore, a careful comparison of the right and left sides, say of the posterior nares, can be made.

The pharyngoscope can be used in children for the examination of the pharyngeal vault, posterior nares and larynx. If the instrument is once in place, the struggles of the child make comparatively little difference, provided the head is held by an assistant. For the examination of these parts in an adult patient who is in bed or unconscious, the pharyngoscope is ideal.

In its present form the instrument is mainly adapted for diagnostic purposes. Treatment through the nose can be instituted if the instrument is held by the patient himself. I hope within a short time to have an attachment ready for catheterization of the Eustachian tubes under the guidance of the eye, in much the same manner as ureter catheterization. Other improvements now in progress, including a thumb switch on the handle, will be published later.

Without the able assistance and advice of Mr. R. Wappler it would have been impossible for the author to have perfected the instrument. He takes this occasion to thank him and also to express his appreciation to Dr. Percy H. Fridenberg for the illustrations he has made.

11 WEST 91ST STREET.

THE SURGICAL TREATMENT OF "UNRESOLVED PNEUMONIA."

Unresolved pneumonias, in my opinion, are rarely, if ever, medical cases, but are evidences of destruction of pulmonary tissue that require surgical treatment. It seems to me that an explanation of this condition may be somewhat as follows: First, the pneumonia follows its usual course; then, either a fresh infection or the pneumococcus taking on a pyogenic character, an abscess develops in or about the pneumonic area. This perforates into the bronchus, ... or through the pleura into the pleural cavity, producing a general or a localized empyema. In cases where the pneumonic area lies close to the interlobar space, the abscess may be encapsulated in this region and may give the impression of a localized pneumonic area.—SAMUEL LLOYD in *The Post-Graduate.*

TREATMENT OF HABITUAL SCOLIOSIS BY PASSIVE AND ACTIVE CORRECTION.*

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The causes of habitual scoliosis are manifold, some of the most important and those most frequently met with are asymmetry of the head, asymmetry of the pelvis, short leg, and asymmetry of the spine itself. Asymmetry of the head is a factor not often taken into account. Ocular defects, causing improper balance of the head, are an obvious cause. Asymmetry of the pelvis, as described by Barwell, is accounted as a not infrequent cause of asymmetrical positions. The shortness of one leg is so common that it fails to attract the attention that it deserves. Asymmetry of the spine itself and unequal thickness of the vertebral bodies on the right side as contrasted with the left is a demonstrated condition.

All these defects of conformation must lead to some lateral deviation of the spine. It depends upon the individual whether these are taken care of by nature in some compensatory way, or whether they cause a deviation notable enough to be classed as deformities.

Aside from the structural defects causing asymmetry and consequent lateral curvature are to be found the faulty postures resulting from attitude and occupation which must be accounted another important factor in producing lateral deviation. Habitual lateral bed postures curve the spine. By favoring the growth of the spine on one side and retarding it on the other, there is a tendency to fix a lateral curve by establishing physical changes in the bones, ligaments and muscles. The twisted position in writing as generally practiced is more frequently than anything else a predisposing cause of many lateral curvatures. Playing the violin in the usual position, sitting in narrow school desks on one side, carrying school books on one hip or in one hand, pains on one side of the trunk caused by furuncles, abscesses, lumbago, contusion of chest wall, pleuritis and intestinal troubles, sports, such as tennis, fencing, golfing, etc., and trades as that of the carpenter, etc., have no doubt contributed to bringing on lateral curvature. Other similar causes might be enumerated, but the aforesaid will suffice to look for these and related conditions in examination.

I claim that the cause of habitual scoliosis lies in the loss of equilibrium of the long muscles of the back (erecti spinæ). As in the above-mentioned examples, lateral curvature develops because of under activity of one side of the muscles of the back, so also can we hope to correct the lateral curve by strengthening the muscles on the opposite side. This does not pertain to those cases alone where one sided muscular activity is the cause, but is also of primary importance to all other cases of scoliosis regardless of origin; because the strength of the erecti spinæ muscles on the convex side is the only latent power in the back which can correct the scoliotic spinal column. The muscular strength on the convex side is surpassed by that on the concave because of continued inactivity of long duration extending in some cases over a period of several years. Through the entire convex curve, the distance between the origin and the insertion of the erecti spinæ muscles is greater, and the muscles having accustomed themselves to this position become too long; their contractile power is lost. The opposite is true of the muscles on the concave side, these muscles retaining the pathological scoliotic spinal column. This difference in the contractile power of these two sets of muscles may be easily proved by the lifting of weights.

At first sight an operation to shorten the muscles on the convex side seems to be one to be considered, yet the flat muscles of the back themselves are not adapted to this operation and the necessary fixation of the trunk after the operation for a period of from 6 to 8 weeks undermines the muscular system of the youthful body to such an extent that, as a rule, this operation is not resorted to. Thus the only method to employ is that of localized gymnastic exercise by which muscular fiber is strengthened and increased, thereby improving lost contractile power and the physiological function of the muscles, at the same time making the spine more flexible by overcorrecting exercises and holding the spine in the improved position between treatments. The most important and sole purpose in the treatment of every case of scoliosis, no matter what the cause may be, is the strengthening of the muscles on the convex side by gymnastic exercises. This therapy is sufficient in cases where no rigidity or deformity have developed and fortunately in a large number of cases which come under the observation of the physician this stage of the disease has not developed. If rigidity and transformation of the vertebræ are present, it becomes necessary to relieve the rigidity as far as possible, which is caused by the contraction of the ligaments on the concave side. This last

* Read before the Surgical Section of the Southern Medical Association, November 12, 1908.

step, and most tedious, is to endeavor to transform the deformed vertebræ into normally shaped bones.

It is a well established fact that weak trunk muscles are strengthened by gymnastic calisthenic exercises and the more complicated exercises on rings, horizontal and parallel bars, stall bars, orthopedic gymnastic plinth, etc. Drooping head, shoulders and otherwise faulty carriage in children, due to weak muscles, can be corrected in a general course of exercise at a gymnasium without the attention of a specialist, and in a short time an erect and firm carriage is attained. Also patients afflicted with a slight curvature are materially benefited by a general gymnastic course of exercise in so far as the back is strengthened and the inclination to speedy fatigue and to lateral drooping is overcome, but that a well defined case of scoliosis can be cured by a general course of gymnastics is out of question. If my assumption is correct, that is, if the muscular strength on the convex side is insufficient to maintain the erect position of the spinal column, in other words, when a permanent lack of symmetry exists, it becomes evident that a general course of gymnastic exercises is insufficient. *A uniform developing of the left and right erecti spinæ muscles will not alter the disproportion. A rational treatment aims at a one-sided development of the weaker muscles of the convex side.*

Sayre's suspension apparatus has been extensively used in connection with gymnastic exercise. During suspension most scoliotic cases show an encouraging improvement of the curve and great results were expected from this simple treatment. But suspension does not influence the muscles, it does not alter the already mentioned disproportion and its use is of such relatively short duration that it has no corrective effect on the scoliotic spinal column. It must be admitted, however, that suspension has a beneficial effect in loosening the shortened ligaments and muscles on the concave side.

The attempt has been made to render the temporary effect of the suspension permanent by applying the plaster jacket, orthopedic corset, etc., while the body was suspended by the head and the scoliotic condition corrected as far as possible. I now enter upon the most difficult and at the same time most frequently disputed point in the treatment of scoliosis. Prominent orthopedic surgeons use the plaster jacket or orthopedic corset in the treatment of almost every case of scoliosis, and other authorities, as for example the prominent Dr. Schulthess, a leading authority in the treatment of scoliosis, opposes most emphatically the plaster jacket or orthopedic corset.

I readily see that by means of a closely fitted plaster jacket, such as employed by Wullstein, enclosing trunk, neck and head, a corrected position is attained, but by its use the harm done to the muscles of the back, to internal organs and to general health of the patient is much greater than the good derived from it. In recent years many physicians have adopted the use of the adjustable orthopedic corset made of leather, celluloid or plaster, etc., in place of the non-adjustable plaster jacket on account of the unfavorable results above mentioned, though the corrective effect is not as permanent as that of the non-adjustable jacket, because the patient, left to adjust it himself, will not attain the corrective effect as accurately.

As before stated, in all scoliotic cases a disproportion exists between the muscles of the left and right sides of the back. The important point is, to strengthen those sets of muscles which will correct the scoliotic condition, thereby re-establishing the equilibrium. To attain this result the treatment is based upon principles which may be taken under the following heads: (1) The stretching of the shortened ligaments and muscles on the concave side by *active assistive* and *passive* exercises. (2) To strengthen and shorten the muscles and ligaments on the convex side by *active resistive exercises;* (a) How best to maintain the improved position.

The best way of stretching the shortened ligaments and muscles on the concave side is by means of *active assistance* and *passive* exercises with the necessary apparatus such as rings, pulley-weights, stall bars, Schmidt's suspension apparatus with exercise, plinth, etc., relieving the rigidity of the spinal column. In order to obtain the best possible results from this mobilizing and stretching treatment it is necessary to produce a fixation of the spine in its corrected position at all times when the patient is not doing the correcting exercises. This is best done by letting the patient sleep in an orthopedic bed (by Lange) where head and hips are fixed between pommels and the curves are overcorrected by means of belts. I have found this method satisfactory in every case in which the bed has been used. During the day when not exercising the patient must wear a brace (by Schlee) which holds the body and head in the corrected position This is the *passive corrective* part of the treatment. Though a staunch believer in the value and efficiency of exercise in scoliosis, I have come to the conclusion that the improved spinal column as the result of a medical gymnastic treatment, must be fixed in a supporting and correcting apparatus between treatments.

(b) The most efficient way to strengthen and shorten the muscles and ligaments on the convex side is by *active resistive* exercises with and without medical gymnastic apparatus. I prefer the active resistive exercises to the purely active exercises for this part of the treatment because the physician is better able, either by his own resistance or that of the patient's to strengthen and shorten the affected muscles in a more localized and direct manner. I have found it necessary to use the supporting apparatus during this part of the treatment also until the muscles are sufficiently strengthened to maintain the spinal column in a normal position.

(c) After removing the supports, the improved position must be always maintained while sitting, standing or lying. The best possible posture is to be maintained while sitting, whatsoever the occupation of the moment may be. It is most readily obtained by sitting with the sacrum loins, dorsum and shoulders well supported against the back of the chair, which should be moulded to the normal shape of the spine. Standing at lessons or any other occupation should be avoided when possible; when unavoidable the patient ought to stand on both feet with heels three to four inches apart. Standing on one foot is most injurious, as it at once throws the spine in a serpentine position. A short leg may be compensated by a thicker sole. As the time spent in sleep is from one-third to one-half during the growing period a proper bed posture is an important factor.

LIGATION OF THE COMMON ILIAC ARTERY UNDER UNFAVORABLE CONDITIONS—A CASE REPORT.

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ST. LOUIS, MO.

Mrs. Margaret M., a patient of Dr. H. W. Curtin, was 50 years of age on her admission to St. Mary's Infirmary. She gave a history of perfect health, with uneventful menopause at 42, and no injury save a blow on the right hip or upper part of thigh about ten years ago. Ten months ago a small mass made its appearance in Scarpa's triangle, near the spot of the former injury. In about six months it had grown to the size of an adult head and was removed by a competent surgeon. There was immediate recurrence, so that in six weeks a second tumor of nearly the same size had to be removed. The incision for this operation never healed, and at the time of the patient's admission to the hospital there was a large protruding mass of granulation tissue lying upon a very large tumor which extended well beyond Poupart's ligament. There was a secondary growth of nearly the same size within the abdomen.

Hemorrhages from the ulcerating surfaces having become frequent and of such serious degree as to endanger the life of the patient it was decided to shut off the principal blood supply by ligation.

Under chloroform anesthesia by Dr. Curtin, with the assistance of Drs. E. H. Oehler and W. U. Kennedy I opened the abdomen to tie the iliac artery, since the position and size of the external tumor were such as to prohibit ligation of the femoral—which, also, would not have checked the growth of, or hemorrhage from, the intra-abdominal mass.

When the abdomen was opened the neoplasm was found to be much larger than it had seemed to be, extending far down into the pelvis and beyond the median line—so that access to the iliac was impossible. However, rather than abandon the woman to her fate, it seemed best to try to reach the artery. Therefore, with digital compression of the abdominal aorta as a temporary preventive of fatal hemorrhage, the peritoneum over the cancer was split and the contents (encephaloid) scooped out to the amount of about two quarts. This permitted such collapse of the enveloping structures as to allow the common iliac to be reached. The space thus provided, however, was so limited that an aneurism needle could not be employed; so a common, large, sharp needle was passed around the iliac one inch from the bifurcation of the abdominal aorta, and the vessel was tied with No. 4 catgut. Dr. Kennedy announced immediate cessation of pulsation in Hunter's canal and the popliteal space; but the leg did not become seriously blanched nor perceptibly cold. A second ligature was placed about a half inch external to the first. Then the remainder of the pelvic growth from the depths and the rent in peritoneum and pelvic fascia sewed up, there being no oozing after ligation of the artery. The abdomen was closed without drainage.

Considerable oozing still continued from the ulcerated surface. Search showed a large pulsating vessel swinging up from the lumbar region through the sheath of the vastus externus. This was cut down upon and found to be as large as an ordinary lead pencil. It was ligated, and bleeding instantly ceased from the sloughing surface; also the entire leg almost immediately turned pale and its surface gradually became cold.

Up to this time there had been no great amount of shock; the patient's pulse and color were good.

So I decided—although this had not been planned—to excise the huge necrotic mass. Hasty work gave us most of the tumor with only a trifling loss of blood; but within that five minutes the radial pulse disappeared and the face gave evidence of most profound shock. The patient was quickly removed to her bed and all remedies usual to combat surgical shock applied.

The subsequent history was peculiar. Although hypodermatoclysis was twice used with nearly a liter of fluid each time and strychnin and spartein were given to the limit no radial pulse could be detected at the end of twenty-four hours; and not a drop of water could be secured from the bladder! Nevertheless the patient had slept some hours and expressed herself as feeling very comfortable. The right leg was mettled and cold from toes to hip.

She died 30 hours after operation, of prolonged shock—since the anuria (which was complete) could hardly have caused death so early; and the pulse had never returned at the wrist.

It is a matter of regret that I was tempted to remove the growth at Scarpa's triangle, for it was this work which caused the shock. Ligations of the common iliac are so comparatively rare that the future course of arterial supply to the lower extremity would have been interesting to note, especially after ligation of the huge anastomatic vessel, which evidently came from one of the lumbars.

The reason for ligation of the common iliac rather than the external was that the latter vessel was so involved in the carcinomatous growth that it could not be reached and isolated.

PENETRATING WOUND OF THE ABDOMEN WITHOUT SYMPTOMS; A CASE REPORT.

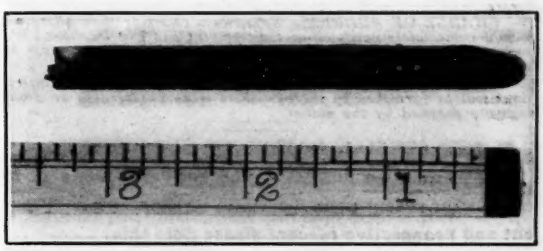
CHARLES H. JAEGER, M.D.,
Instructor in Orthopedic Surgery, College of Physicians and Surgeons; Chief of Orthopedic Department, Vanderbilt Clinic, etc.,
NEW YORK.

The patient was a boy thirteen and one-half years old. He states that five months ago he fell from a bicycle. He suffered no inconvenience from his fall and the only injury noticed was a small abrasion of the skin on the abdomen in the region of the right groin. This scratch had never healed but soon became slightly swollen and three weeks after the accident it began to discharge pus. This discharge has continued ever since in moderate amount. The boy does not remember having had any pain in the hip or spine, and comes for relief of the sinus and deformity.

Physical Examination.—Well nourished boy of average height. He walks with marked limp and the body is curved markedly to the right. The right leg is flexed.

Examination of the leg reveals flexion deformity of 45° of right thigh. Considerable psoas spasm. Leg movable in abduction and adduction. Spine is held to the right by strong muscular spasm.

There is a small sinus in the right groin which admits a probe to the depth of two and one-half inches, the direction of the sinus being toward the median line and backwards. Palpation is negative. An *x*-ray picture shows nothing abnormal.



Photograph of the Pencil Fragment.

Diagnosis is withheld. The boy is to remain under observation, and for relief of psoas spasm a short plaster of Paris spica is applied. He comes for dressing of the sinus every two days. Two weeks after first seeing the boy, when the gauze dressing was removed, a dark object was seen filling up the mouth of sinus. This quickly slipped up out of the mouth of the wound and was found to be a fragment of lead pencil three and one-half inches long. Three days later the discharge was slight and all other symptoms had disappeared. In two weeks the sinus had ceased discharging and wound was healed.

My explanation of the case is that the pencil had penetrated his right psoas muscle and was held there by muscular spasm. The plaster spica relieved the spasm and permitted the foreign body to be discharged.

471 PARK AVENUE.

AMERICAN MEDICAL EDITORS' ASSOCIATION.

The coming meeting of this Association, to be held at the Marlborough-Blenheim Hotel, Atlantic City, June 5th and 7th, celebrates its fortieth anniversary, and an unusual programme has been prepared for the occasion.

It is expected that delegates from the foreign medical press will be present and every medical Editor should make an effort to meet with this Society.

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, MAY, 1909.

ADDITIONS TO THE TECHNIC OF SKIN GRAFTING.

Recent surgical literature contains two promising contributions to the technic of skin grafting. The first of these concerns a method of local anesthesia for the removal of the grafts, and is described by Dr. Gunnar Nyström, of Stockholm, in *Zentralblatt für Chirurgie,* January 30, 1909. He secures a large field of anesthesia on the outer, anterior aspect of the thigh by percutaneous infiltration at that point, just within the anterior superior spine of the ilium, where the lateral cutaneous femoral nerve escapes from the pelvis. For the purpose he uses 4 to 5 ccm. of a one per cent. solution of novocain, to which there are added five drops of adrenalin solution, 1 to 1,000, to each 10 ccm. The injection is made first just internal to the spine, then below it, at various depths in the subcutaneous tissues, some of the fluid being deposited under the fascia lata.

To provide a suitable means of holding the (Thiersch) grafts in position, without interfering with the escape of secretions or the retention of the grafts when the dressing is changed, has been a perplexing problem. A single layer of gauze is sometimes applied directly to the wound beneath the absorbent dressing, but it is too adherent to be ideal. Gutta-percha strips or perforated silver foil may be used, but these threaten the viability of the grafts by maceration. The "open method" of treatment, which consists in applying no dressing over the wound, is inapplicable to all ambulant and to many recumbent cases. In *Annals of Surgery,* March, 1909, Dr. John Staige Davis, of Baltimore, describes a method of splinting skin grafts which would seem superior to any hitherto suggested. It consists in the immediate application of a coarse meshed net impregnated with gutta-percha. He uses a curtain net of loosely woven bars of cotton thread, surrounding openings about one centimeter in diameter. (Smaller openings become clogged.) After washing out the sizing and drying, the fabric is soaked in a twenty per cent. chloroform solution of pure gutta-percha until the chloroform evaporates. The stiffened fabric is sterilized by immersion in three changes of sublimate solution, 1-1,000, for twelve-hour periods and preserved in the same antiseptic. When needed, it is rinsed in saline solution and dried with a towel. A piece of the material large enough to extend beyond the grafted surface is pressed down evenly upon it. Any type of dressing may be applied over this, and Davis finds it particularly desirable when the surface is exposed to the air. With reasonable precautions in the removal of the dressings these may be changed as needed, he says, with little danger of displacing the grafts.—W. M. B.

A NOTABLE ADVANCE IN PHARYNGO- AND LARYNGOSCOPY.

Since the introduction of the throat mirror by Garcia, there has been no improvement on the method of examining the larynx, except direct laryngoscopy—a procedure of some magnitude, intended for special cases and altogether unsuitable as an office routine. Certainly, for the examination of the naso-pharynx there has been until the present time no progress beyond the use of the mirror,—a method often and notoriously unsatisfactory.

We greet now, as a distinct and notable advance, the instrument and method described by Harold Hays, briefly, in the *N. Y. Medical Journal,* April 17, 1909, and more at length in this issue of the AMERICAN JOURNAL OF SURGERY. The instrument is merely an adaptation of the indirect vision cystoscope; and the very simplicity of such an adaptation makes one wonder that it was not done before.

It is no small accomplishment that allows the deliberate study of clear and unobstructed images of the posterior nares and the Eustachian orifices, the pharyngeal vault, the larynx and perilaryngeal tissues, without discomfort to the patient or effort for the examiner, and with but a single introduc-

tion of a small instrument! The new method does away with the necessity for the often practised, painful digital examination for adenoids. It affords a means of making topical applications, through the nose or directly through the pharynx, under visual guidance. No doubt, too, as its author plans, it will admit of the attachment of Eustachian catheters to be introduced, under the eye, as we now insert ureter catheters.—W. M. B.

BIER'S VENOUS ANESTHESIA.

In the issue of November, 1908, we called attention to a method, devised by Bier, of producing anesthesia limited to one extremity, by the injection of a 0.5 per cent. novocaine solution into one of the principal superficial veins in an area between two constricting bandages. At that time there had been comparatively few trials of Bier's method, which, however, appeared so promising that we awaited with great interest the publication of fuller observations. This has come in a paper by Bier himself, in the *Berliner Klinische Wochenscrift,* March 19, 1909. It is based on experiences with 134 operations. While this number is still not very large, it is sufficient to serve as a fair index to the worth of the procedure, for it includes such diverse operations as amputations, resections, arthrodeses, arthrotomies, necrotomies, bone suturings, tendon transplantations, varicose vein extirpations, etc. Of these 134 operations, in 115 the anesthesia was reported successful, in 14 satisfactory and only five were unsatisfactory. When it is considered that of the five unsatisfactory cases, three occurred in children, a class of patients in whom any form of local anesthesia is attended with much difficulty, these figures appear still more favorable.

The method as now practiced is essentially as described in our earlier report. It need only be said that Bier lays much emphasis on the point that the extremity must be completely bloodless before the anesthetic is introduced. Poisoning followed in only two cases, and in both it was of a very mild grade. Bier warns against the use of more than 80 c.cm. of the solution and against sudden release of the constricting bandage. He mentions only one contraindication—arterio-sclerotic or diabetic gangrene. In three amputations for this malady, gangrene of the stump resulted. He believes that the gangrene was due to constriction of the limb and not to the effects of the anesthetic.

On the whole, this method appears to have a distinct field of usefulness and to go a long way in solving the problem of anesthesia. Our only fear is this, that unless the technic is properly carried out, the method will acquire a disrepute which it may not deserve. We therefore advise surgeons who desire to take up this new form of anesthesia, to study the originator's directions with scrupulous care.—E. M.

Surgical Suggestions.

Local applications of tincture of iodine is one of the most satisfactory treatments for small chronic ulcers.

The surgeon should keep closely in touch with cases of acute retropharyngeal abscess as serious edema of the glottis may develop and require tracheotomy for its relief.

Not all soft swellings of the axilla are to be incised. Aneurism of the axillary artery has been mistaken for abscess.

The diagnosis of tuberculosis and cancer will make better progress when family history is utterly ignored.

When gas comes from an abscess which has been opened in some part of the abdomen, it must not be hastily assumed that the bowel is involved, as many of the abdominal suppurations are associated with gas-forming bacteria. This is notably the case with subphrenic abscesses.

The prognosis in tuberculous diseases of bones and joints in children has been improved more by the practical application of the fresh air treatment than by any other means. The next step in surgical enlightenment is to apply the same treatment to other surgical disease.

Patients who show a progressive loss of vocal power should be examined most carefully for an intralaryngeal condition. An acute aphonia may be due to an inflammatory condition or paresis of one cord; alcoholism, syphilis, tuberculosis and malignant disease bring on a chronic condition. Two most important causes of chronic laryngitis are thickening due to an old inflammatory process and the presence of a small, hard, nodular tumor on one of the cords, *e. g.*, fibroma.

Book Reviews.

Surgery of the Upper Abdomen. In Two Volumes. By JOHN B. DEAVER, M.D., LL.D., Surgeon-in-Chief to the German Hospital, Philadelphia, and ASTLEY PASTON COOPER ASHHURST, M.D., Surgeon to the Out-Patient Department of the Episcopal Hospital, Philadelphia. *Vol. I: Surgery of the Stomach and Duodenum.* Octavo; 468 pages; 76 illustrations. Philadelphia: P. BLAKISTON'S SON & Co., 1909. Price, $5.00, net.

The surgery of the upper abdomen has so far advanced, its literature has so developed, that it is quite proper at this time to "take stock" of it—to eliminate what is unworthy of permanent record and to gather together harmoniously the accomplishments that are permanent or, for the present, acceptable. This is the task that these authors have undertaken, and part of their work is before us in the first of the two volumes in which the surgery of the upper abdomen will be presented. Volume I deals only with the stomach and duodenum, leaving the liver, bile-passages, pancreas and spleen for the second volume.

With a painstaking digest of a voluminous literature, are incorporated the personal observations of a surgeon of wide experience, always clear and forceful in the expression of his opinions.

In the first three chapters anatomy, physiology and general diagnostic considerations (physical examination, gastric analysis, skiagraphy, etc.) are respectively considered. Chapters IV to XIII, inclusive, deal with benign, malignant, inflammatory and traumatic affections of the stomach, duodenum and diaphragm. Chapter XIV (about 70 pages) is a concise description of the most important operations on the stomach and duodenum, of the preparation for operation and of general technic, and Chapter XV is devoted to the operative complications and sequelæ. To each chapter is appended a bibliography of the most important literature.

Perhaps the portion of the work by which one can best estimate the spirit in which it was undertaken is that dealing with the borderline condition, gastric ulcer. Here we find no surgical over-enthusiasm, but a sane consideration of statistical reports and a clear statement of the course to pursue. Concerning "acute," active ulcers, thoroughgoing medical treatment, to be continued for several weeks (sometimes even three months) is advised for all cases; but it is also pointed out that medical treatment often fails and that its cures are usually (various statistics quoted) not permanent. The authors fairly concede that the question of operation during an active hemorrhage from a gastric ulcer is in dispute, but they are in agreement with perhaps the majority in opposing this procedure. "We should feel," they say, "extremely loath to undertake an operation in cases such as these, where the chance of discovering the seat of the hemorrhage is so exceptionally slight, and where medical treatment offers a probability of cure in a fair proportion of cases." Again, concerning the excision of ulcers, its supporters and opponents are freely quoted, and the authors conclude: "So that while we admit in the abstract the force of some of the arguments advanced by the advocates of excision, it seems a saner course to limit the more dangerous operation to the more serious condition of acknowledged malignancy; and when there is doubt . . . to perform the more extensive operation only in carefully selected cases." Ulcers distant from the pylorus are regarded as "least unsuited for treatment by excision."

Surgical Diseases of the Abdomen, with especial reference to Diagnosis. By RICHARD DOUGLAS, M.D., Formerly Professor of Gynecology and Abdominal Surgery, Medical Department, Vanderbilt University, Nashville; Ex-President of the Southern Surgical and Gynecological Association, etc. *Second Edition,* revised and enlarged. Edited by RICHARD A. BARR, B.A., M.D., Professor of Abdominal Surgery, Medical Department, Vanderbilt University. Octavo; 897 pages; 20 full-page plates. Philadelphia: P. BLAKISTON'S SON & COMPANY, 1909. Price, $6.00.

The first edition of this work, 1903, was a masterly product of scientific critique, critical observation and excellent style. Douglas showed an unusual power of analysis and an ability to weigh theories and unproven data against clinical facts. His work was a delightful exposition of the diagnostics of surgical and borderland abdominal diseases.

In preparing this second edition Barr has preserved the original text, with only such changes as seemed to him to have been made necessary by the actual progress of the last few years. While we commend the editor's respect for the original, we believe that he has allowed it to make him too chary of making desirable additions. For example, in the section on *Appendicitis* we find no reference to Meltzer's or other recently developed signs. Nor do we find in the book an exposition of "Head's" hyperesthetic zones, so important in abdominal diagnosis. Also, if the blood count, pain, vomiting, diarrhea and other abdominal signs and symptoms were analyzed in separate chapters, the value of the book would have been enhanced.

Epoch-Making Contributions to Medicine, Surgery, and the Allied Sciences, Being Reprints of those Communications which first conveyed Epoch-Making Observations to the Scientific World, together with Biographical Sketches of the Observers. Collected by C. N. B. CAMAC, A.B., M.D., New York City. Octavo; 435 pages, with portraits. Philadelphia and London: W. B. SAUNDERS COMPANY, 1909. $4.00, net.

In this most welcome and valuable compilation Camac has reproduced, and embellished with biographical notes and lists of writings, the following essays: 1. Lister's "On the Antiseptic Principle of the Practice of Surgery." 2. Harvey's "Anatomical Disquisition on the Motion of the Heart and Blood" (translation). 3. Auenbrugger's treatise "On Percussion of the Chest" (translation). 4. Laënnec's "Treatise on the Diseases of the Chest and on Mediate Auscultation" (translation). 5. Various essays of Jenner on the Variolæ Vaccinæ. 6. Morton. Two essays on Sulphuric Ether Inhalation. To which are added various letters, a communication from John C. Warren, a portrait of Horace Wells and Sir J. Y. Simpson's essay on Chloroform. 7. Holmes' essay on "The Contagiousness of Puerperal Fever." To this is added a list of the writings of Semmelweis, as a recognition of the man who suffered and fought for what Holmes had published earlier, but quietly and in a more or less obscure medical journal.

We are so apt to bow down to medical accomplishments stamped "made in Germany"! Is it not striking that five of these seven epoch-making contributions to medicine are Anglo-Saxon? And surely no one can quarrel with Camac at the inclusion of any of these seven in his compilation, albeit we cannot make a list of *the* epoch-making contributions without Paré's, Pasteur's and Koch's. And those of Virchow, Roux and Ehrlich might well be included also. The list could be extended, if one does not too strictly draw his definition of epoch-making contributors, to include Helmholtz, Garcia, McDowell.

Indeed, we believe that the profession would welcome a small library of volumes on the same plan as Camac's, reproducing or relating the important contributions to medicine of Vesalius, Malpighi, Morgagni, among the early anatomists, of Müller, Cooper, Bright, Langenbeck, Skoda, Esmarch, Thiersch, Sim, Senn, Murphy, Roentgen, O'Dwyer, Koller, Nitze, Lazear, Fitz and many others (of whom these are but scattered examples) whose contributions, not strictly epoch-making, were nevertheless "great."

While Camac's biographical and other notes are not lengthy, they represent several years of labor, for which he deserves much thanks. His book will be cherished in the libraries of all those to whom medicine is more than a vocation!

Clinical Diagnosis and Treatment of Disorders of the Bladder. With Technic of Cystoscopy. By FOLLEN CABOT, M.D., Professor of Genito-Urinary Diseases,

Post-Graduate Medical School; Attending Genito-Urinary Surgeon, City and Post-Graduate Hospital, New York. Duodecimo; 224 pages; 42 illustrations. New York: E. B. TREAT & COMPANY, 1909. Price, $2.00.

There is need for a concise, practical, English treatise on cystoscopy and on the diagnosis of diseases of the bladder, but it must not be expected that a complete exposition of these subjects is crowded within the limits of the publication under consideration. In a small book of but 200 pages, in which a great deal of room is occupied by illustrations, the author merely outlines "the principal methods of diagnosing and treating disorders of the urinary bladder," including a discussion of the cystoscope and its uses.

Cabot describes the principal types of cystoscope. He indicates a preference for the direct vision instrument for ureter catheterization. His instructions in technic will be of help to the novitiate in cystoscopy, but the work is, of course, too elementary for those more advanced in the diagnosis of bladder disorders.

Nouveau Traité de Chirurgie. Publié sous la direction de A. LE DENTU et PIERRE DELBET. Volume XVIII. *Oto-Rhino-Laryngologie* par ANDRÉ CASTEX et F. LUBET-BARBON. Octavo; 601 pages; 215 illustrations. Paris: J. B. BAILLI RE FT FILS, 1909.

As indicated by the title, this volume deals with three special branches—otology and rhinology, written by Castex, and laryngology, by Lubet-Barbon. Castex has gone into the description of the accessory sinuses of the nose in great detail, as the increasing importance of these structures well merits. On the other hand, the mastoid operation deserves more thorough treatment than it has received. The non-specialist will be impressed by the enormous number of special instruments recommended (?) by the authors. The book is plainly written, so that the surgeon or general practitioner will find it of use.

The Therapeutics of Radiant Light and Heat and Convective Heat. By WILLIAM BENHAM SNOW, M.D., Author of "A Manual on Electro-Static Modes of Application, Therapeutics, Radiography, and Radiotherapy" and "Currents of High Potential of High and Other Frequencies"; Editor of the *Journal of Advanced Therapeutics;* and late Instructor in Electro-Therapeutics in the New York Post-Graduate Medical School, etc. Octavo; 119 pages; illustrated. New York: SCIENTIFIC AUTHORS' PUBLISHING COMPANY, 1909.

This is a condensed manual on the employment of radiant light and heat. Especial attention has been paid to physiological actions, practical indications, and methods. A chapter is included on the relative action of radiant light and heat and the Roentgen ray. Four chapters deal with the employment of convective heat, as showing the contrast and similarity of action and the differences and similarities of radiant and convective heat are indicated.

The typography is excellent and the text is well illustrated.

The International Medical Annual. *A Year Book of Treatment and Practitioner's Index. Twenty-seventh Year* (1908). Duodecimo; 683 pages; 111 illustrations and 44 plates. New York: E. B. TREAT & Co., 1909. Price, $3.50.

This year's issue of the "Annual" gives a very comprehensive review of the advances made in all branches of medicine. The special branches, particularly ophthalmology and rhinology, are very fully dealt with. Abdominal surgery has several important articles devoted to results and new methods. The present volume is fully up to the standard of its predecessors.

Saunders' Pocket Medical Formulary. With an Appendix containing Posological Table; Formulæ and Doses for Hypodermatic Medication; Poisons and their Antidotes; Diameters of the Female Pelvis and Fetal Head; Obstetrical Table; Diet List for Various Diseases; Materials and Drugs Used in Antiseptic Surgery; Treatment of Asphyxia from Drowning; Surgical Remembrancer; Table of Incompatibles; Eruptive Fevers; Weights and Measures, etc. By WILLIAM M. POWELL, M.D., Author of "Essentials of Diseases of Children"; Member of the Philadelphia Pathological Society, etc. *Ninth Edition,* Thoroughly Revised, Enlarged and Adapted to the Eighth Revision (1905) of the U. S. Pharmacopeia. Philadelphia and London: W. B. SAUNDERS COMPANY, 1909.

The present edition contains a great many excellent formulæ, applicable to the commonest diseases. The appendix although not by any means complete, covers in a brief way points likely to be forgotten and necessary to be obtained at a moment's notice.

Backbone. Hints for the Prevention of Jelly-Spine Curvature and Mental Squint. A Straight-Up Antidote for the Blues and a Straight-Ahead Sure Cure for Grouch. Collected from various sources and arranged by S. DEWITT CLOUGH, Ravenswood, Chicago, December, 1908. Price, 50 cents.

A prettily printed publication; a chastening chirp of Chicago cheerfulness!

Books Received

Constipation and Intestinal Obstruction. By SAMUEL G. GANT, M.D., LL.D., Professor of Diseases of the Rectum and Anus in the New York Post-Graduate Medical School and Hospital, etc. Octavo; 559 pages; 250 original illustrations. Philadelphia and London: W. B. SAUNDERS COMPANY, 1909. Cloth, $6.00, net. Half morocco, $7.50, net.

Appendicitis and Other Diseases of the Vermiform Appendix. By HOWARD A. KELLY, M.D. Large octavo; 502 pages; 215 original illustrations (some colored) and 3 plates. Philadelphia and London: J. B. LIPPINCOTT COMPANY, 1909. Price, $6.00.

Kreigschirurgische Rück- und Ausblicke vom asiatichen Kriegsschauplatze. Von DR. HERMANN FISCHER (Breslau-Berlin), Professor der Chirurgie, Geheimem Medizinalrat. Octavo; 198 pages. Berlin: AUGUST HIRSCHWALD, 1909.

Les Eaux Minerales en Injections Hypodermiques. Premiéres Expérimentations. Par DR. ROGER Trémalières. Brochure; 24 pages. Paris: A. MALOINE, 1909. Price, 1 franc.

Children Who Need Not Have Been Blind. Prevention a Public Duty. A *pamphlet* dealing with some statistics of Ophthalmia Neonatorum and means of controlling midwives, etc., to prevent it. Issued by the COMMITTEE ON PREVENTION OF BLINDNESS OF THE NEW YORK ASSOCIATION FOR THE BLIND.

Twenty-Second Annual Report of the State Board of Health of the State of Ohio for the year ending December 31, 1907. Octavo; 375 pages; cloth.

Clinique Therapeutique du Practicien. Par les Docteurs H. HUCHARD, Médecin de l'Hôpital Necker, etc., et CH. FIESSINGER, Directeur adjoint de la Clinique du Coeur. *Deuxième Partie.* Octavo; 413 pages. Paris: A. MALOINE, 1909.

Les Régimes. Alimentation rationnelle dans la Santé et la Maladie. Par le DR. F. DE GRANDMAISON. Duodecimo; 263 pages. Paris: A. MALOINE, 1909.

Progress in Surgery.

A Résumé of Recent Literature.

Intestinal Localization, Including Surgery and Surgical Anatomy of the Small Intestine. G. H. MONKS, Boston. *Journal of the American Medical Association,* April 3, 1909.

Monks describes the mesentery and its characteristics, with those of the intestines, in different portions of the bowel. The characteristics of the loop of bowels in the upper portion of the intestine and of the mesentery attached to it, are the thickness of the walls, the large caliber, and the great vascularity together with the numerous valves which can be easily felt through the walls. The attached mesentery, if there is not too much fat in it, exhibits large, long straight vessels radiating to the intestine from arches (principally primary) deep in the mesentery. Ordinarily the mesentery is liable to be thin and to show the vessels. On the other hand, the characteristics of a loop of bowel near the lower end of the small intestine and of the attached mesentery are its thinness, small caliber, moderate vascularity, and lack of valves felt through the walls. The attached mesentery has relatively short, small, tortuous vessels, which spring from secondary or even tertiary loops deep in the mesentery. There is usually also more fat in this part. The transition between the two is gradual, but the surgeon can approximate the localization. Monks illustrates the situation in a general way by a cut in which the part over the first horizontal line lodges the uppermost third of the small intestine. If the incision is in the upper part of the abdomen, especially in the middle line or to the left of it, any loop of small intestine the surgeon meets will belong probably to the uppermost third of the gut; if his incision is in the middle part of the abdomen or in the left iliac, the loops belong probably to the middle third, and finally, if his incision is in the right iliac fossa or to the right of the rectus muscle, or even in the middle line between umbilicus and pubes, the loops will probably belong to the lowest third of the intestine. Monks describes a method by which in cases in which the abdominal wound is large enough to palpate the mesenteric root we can learn the right direction of the bowel. The loop is drawn well out of the wound, and its two extremities held upward by the assistant, the axis of the loop being kept by him parallel to the known axis of the root of the mesentery. The surgeon's right hand is now applied to the loop in such a manner that his thumb is one side of the mesentery and his first two fingers are on the other. The thumb and fingers are then gently pushed downward in the direction of the root of the mesentery. If, by palpation of the mesentery, the surgeon detects no twist in it, he at once knows that the upper end of the loop (as it is then held) will, if followed up, conduct him to the duodenum, and that the lower end will conduct him to the ileocecal valve. If, however, there is a twist in the mesentery, the surgeon should withdraw his hand, remove the twist by turning the bowel, and examine again. When, finally, no twist remains in the mesentery, the surgeon knows that the end of the loop which is uppermost is the one which leads to the duodenum, and that which is lowest to the ileocecal valve. He describes also the procedure for protecting the intestines, when exposed outside the abdomen, by sheets of rubber, thus allowing the abdominal cavity to be more thoroughly inspected.

On the Question of the So-called Acute Post-operative Dilatation of the Stomach, with Observations on the Technic of Posterior Gastro-Enterostomy (*Zur Trage der Sogenannten Akuten post-operativen Magendilatation nebst Bemerkungen zur Technik der hinderen Gastro-Enterostomie*). G. AXHAUSEN, Berlin. *Deutche Medizinische Wochenschrift,* January 28, 1909.

It has always been a debated point as to whether in cases of post-operative dilatation of the stomach (gastro-mesenteric ileus) the dilatation is a primary condition or is the result of compression of the duodenum by the tense lower edge of the mesentery. Judging from observations in two cases in which an obstruction of the small intestine was found near the duodeno-jejunal angle, the author is led to believe that the dilatation of the stomach is in all probability not a secondary process, for in neither case were there present dilatation nor any of the attendant symptoms. In the first case, the obstruction was due to a band at the site of a gastro-enterostomy loop; in the second a tuberculous ulcer just below the site of a recently done gastro-enterostomy. The band in the first case arose from the slit in the transverse mesocolon; this, the author believes, can be prevented by suturing the edges of the slit to the anastomosing ring.

Penetrating Wounds of the Abdomen. FLOYD W. MCRAE. *New York Medical Journal,* March 13, 1909.

1. In civil practice every suspected penetrating wound of the abdomen, under favorable conditions of practice, should have the benefit of wound tracing.
2. When the wound proves to be penetrating, an exploratory laparotomy should be done at once, and visceral damage excluded or repaired as far as practicable.
3. There is far less danger from wound tracing than from probing or from masterly inactivity, while awaiting positive evidence of visceral damage requiring operative interference.
4. Local toilet with moist sponging for cleansing is better than free peritoneal irrigation.
5. When in doubt it is safer to drain.
6. Operations done within two hours should not give a mortality over twenty-five to thirty per cent., within four hours over forty per cent., within six hours over fifty per cent., within eight hours over sixty per cent., and within twelve hours over seventy per cent.
7. After twelve hours' expectant treatment is best, unless there are some definite indications for operation.

Chronische Appendizitis. J. KAUFMAN. *New Yorker Medizinische Monatsschrift,* January, 1909.

The diagnosis and operative treatment of chronic appendicitis have often been based on subjective symptoms alone. The result has been that symptoms have persisted after appendicectomy (at operation a normal appendix was not infrequently found) and that later the symptoms were found referable to some other intraabdominal organ —stomach, intestine, gall-bladder, etc. Tenderness at McBurney's point is by some considered pathognomonic of appendicitis, but the writer has found this sign present in other affections, especially in inflammatory diseases of the cecum. He has found that, in a number of cases, McBurney's sign has persisted after appendicectomy. Meltzer's sign is of considerable diagnostic value in chronic appendicitis. Other factors in diagnosis are sudden onset of localized pain with localized tenderness, reflex generalized abdominal cramps with diarrhea (in lead, gastric, biliary, ureteral colics there is usually constipation), and persistence of localized tenderness and pain after the bowel disturbances have ceased. This is in contrast to diseases of the intestines, in which pain and tenderness disappear after the attack of diarrhea and cramps.

A Case of Epiploitis Following the Radical Cure for Inguinal Hernia. C. G. CUMSTON, Boston. *New York Medical Journal,* February 6, 1909.

The hernia contained a large mass of omentum which required ligation and removal. The day following operation, the patient complained of considerable pain and the abdomen was distended. These symptoms continued up to the eighth day (the bowels had moved satisfactorily), when the temperature rose 2° C. and at the same time there was an aggravation of the symptoms above mentioned. The abdomen became more distended and was painful on percussion. On palpation a tumefaction was noted on the side of the operation, extending from the iliac fossa to the costal border, most marked over the cicatrix of the operation. The mass was tender, dull on

percussion and appeared to lie superficially. At the end of 12 days the temperature reached normal, all the symptoms had gradually abated, and the tumefaction slowly disappeared.

Intramuscular Inguinal Hernia (*Ueber intramuskuläre Inguinalhernien*). V. SCHILLER, Vienna. *Wiener Medizinische Wochenschrift,* February 8, 1908.

In this form of hernia, the sac, instead of descending into the scrotum, passes upward and outward between the external and internal oblique muscles. Twenty-seven cases of this variety have been reported, to which the author adds four of his own. The majority are of the congenital type of herniæ, with a monolocular sac and an ectopic testicle. The testicle, as a rule, lies near the external ring and is atrophic. The sac is oval in shape, seldom exceeds the size of a hen's egg and lies parallel with Poupart's ligament. The author attributes the genesis of this abnormal position of the sac to two factors. 1. Prevention of descent by the ectopic testis; 2. Badly fitting trusses. A noteworthy feature of this form of hernia is its irreducibility and therefore a large proportion of incarcerations.

Osteotomy of the Cuneiform for Hallux Valgus (*Osteotomie des Keilbeines bei Hallux Valgus*). H. RIEDL, Linz. *Archiv für Klinische Chirurgie,* 1909. Vol. 88, No. 2.

After reviewing briefly the more important operative methods for the correction of hallux valgus, the author describes a new procedure which he employed successfully in one case. A longitudinal incision is made over the inner border of the foot, so as to expose the internal cuneiform and corresponding tarso-metatarsal articulation. A wedge with base outward is cut out of the cuneiform and the base of the metatarsal is sufficiently liberated to make it mobile. The bone is then forced from its position of adduction into normal, parallel relation with the other metatarsals. Redressement of the big toe follows, and, after suture of the wound, a plaster of Paris dressing is applied. he author advises the wearing of a cast until bony union has occurred. The skiagrams taken several months after operation show an ideal result.

Subacromial Bursitis. L. FREUND. *Medizinische Klinik,* March 14, 1909.

In a case of inflammation of, or hemorrhage into this bursa, following trauma, the diagnosis could be made only by radiography. The picture showed a distinct, sharply-outlined shadow of dumb-bell shape, in the position of the bursa. The shadow in subsequent radiographs disappeared as the symptoms receded.

Anterior Metatarsalgia; its Causes and its Relief. N. ALLISON. *Boston Medical and Surgical Journal,* February 25, 1909.

The main predisposing cause, according to the author, is the pinching and crowding forward of the metatarsal bones from tight and poorly fitting shoes. This causes a sinking of the anterior arch resulting in compression of the affected branch of the external plantar nerve between the heads of the metatarsal bones. The ordinary methods of raising this arch by means of pads, plates, etc., all have their disadvantages. The author has devised a simple method which can be conveniently worn and which has proven highly effective in his hands. A depression is cut in a plaster cast of the affected foot, so that the point of greatest concavity is behind the heads of the second and third metatarsal bones. The depression is made elliptical or circular, broad or shallow, to suit the individual case. A leather or felt pad is made to fit this depression and is then sewed to a band of thin, soft, pliable leather, which is applied around the anterior part of the foot and laced tightly over the dorsum. The slight hallux valgus usually present keeps this band in place. In addition the author orders exercises whereby the muscles of the anterior foot are developed and educated. He believes that no reason exists for excision of the head of the fourth metatarsal bone.

Injury to the Semilunar Cartilages of the Knee. R. MORISON, Newcastle-on-Tyne. *Lancet,* February 27, 1909.

As surgeon in a large mining district Morison has had occasion to see a large number of the above cases; he has operated on 75 in all. The prevailing assumption that the pathology of injury to the semilunar cartilage is a displacement, the author has found to be entirely wrong. In all of his cases the lesion was found to be a fracture; the dislocation is merely secondary. He concludes that displacement, without fracture, if it occurs at all, must be a very rare event. Of 100 cases, in 98 the internal cartilage was fractured and in two the external. The diagnosis is made by the typical history of sudden locking, the inability to extend the knee, and swelling of the joint following the attack. In a fair percentage of the cases, osteo-arthritic changes may occur, resulting in more or less permanent disability. The treatment of recent cases consists in first reducing the dislocated cartilage. This can usually be done by flexing the joint to its fullest extent and then suddenly extending it. If not, rotatory movements should be made in the fully flexed position before extension is performed. If this also fails, these movements should be repeated under anesthesia. After reduction, splints are applied for six weeks. If displacement recurs, the case may be treated by the aid of a support or by operation. For persons whose livelihood depends on a strong knee, the support is useless and a radical operation is advised. This operation consists in a hockey-shaped vertical incision on the inner side of the knee, opening of the joint and removal of the anterior two-thirds of the affected cartilage. Of 41 operated patients in whom the subsequent history could be traced, 38 reported themselves able to work, while 3 were still disabled. The average time before work was commenced was about 12 weeks.

Bismuth Poisoning. Two Cases, with One Fatality, Following Injection of Bismuth-Vaselin Paste. V. C. DAVID and J. R. KAUFFMAN, Chicago. *Journal of the American Medical Association,* March 27, 1909.

Bismuth Poisoning. VICTOR J. BACCUS, Chicago. *Journal of the American Medical Association,* p. 1273, April 17, 1909.

In the first case, male, aged 24, 3 ounces of 33⅓ per cent. bismuth-vaselin paste (Beck) were injected into a tuberculous hip sinus. Twenty days later 6 ounces were injected. Eleven days later there developed ulcerative stomatitis with loosening of the teeth, swelling, salivation and pain; also headache and constipation. Gradual improvement in 6 weeks, leaving blue deposits in mucosa. Later, an abscess of the thigh was opened and some bismuth paste evacuated. Three months after injection the patient developed a transitory psychosis. Never palpitation, cyanosis, dyspnea or dizziness.

In the second case, male, 21, 6 ounces of 33⅓ per cent. bismuth paste were injected into a hip sinus. Ten days later there developed stomatitis, and, after a few days, vomiting. The stomatitis (and glossitis) progressed and the pulse became rapid and weak. Restlessness, insomnia and choreiform movements developed, then involuntary evacuations, bedsores and complete irrationality. Death 27 days after the injection.

[The amounts of bismuth injected in these cases seems dangerously large.—ED.]

Concerning these cases, VICTOR J. BACCUS wisely suggests that when symptoms of poisoning appear the sinus should be opened and the paste removed. He reports a case (boy of 10), in whom stomatitis appeared 5 days after injecting 2 ounces of 33 per cent. paste into an appendicitis sinus. The paste was removed; and subsequently ½ ounce injections were made with resulting cure and no poisoning.

Bismuth Poisoning and a Non-Poisonous Substitute for Bismuth in X-Ray Photography (*Ueber Wismutvergiftung und einen ungiftigen Ersatz des Wismuts für Röntgenaufnahmen*). L. LEWIN, Berlin.

Muenchener Medizinische Wochenschrift, March 30, 1909.

Bismuth poisoning is increasing in frequency. Both administration by mouth, or absorption from granulating surfaces can occasion serious changes, depending upon idiosyncrasy. The commonest symptoms are discoloration of the tissues, local changes such as stomatitis and ulceration, intestinal derangement, irritation of the kidneys, circulatory changes, and fever, headache and delirium. These disorders are due to the bismuth and not to the nitric component of the salt.

The author has experimentally examined various metals in order to discover a harmless substitute. Magnetic iron ore in extremely fine powder form (passed through a sieve containing 5,000 openings to the square centimeter) has proven excellent when administered in a 15-30 per cent. mixture with mashed potatoes, etc. No disturbances of any kind are noted. The radiographs even excel those obtained with bismuth mixtures.

Floating Spleen with a Twisted Pedicle and Intestinal Obstruction. V. I. LEDOMSKY. *"Chirurgia"* (Russian), December, 1908.

Ledomsky describes a very interesting case of a simultaneous occurrence of an obstruction in two different places of the intestinal canal, caused in each place by a different etiological moment. The patient entered the hospital in a moribund condition, with all the symptoms of an acute ileus. On examination besides the clearly felt intestines, there was noticed to the right of the umbilicus a solid tumor with the size and shape of a kidney. At the operation the tumor proved to be a floating spleen displaced to the right of the median line. It was necrotic, and its twisted pedicle compressed a large loop of the intestine, producing a strangulation. When the pedicle was doubly ligated and cut and the spleen removed, it was found that another loop of the intestine had slipped through a slit in the mesentery. This loop was both strangulated and twisted fully 360° on its mesenteric axis. The strangulation line of this loop became necrotic. Instead of resecting the necrotic segment, Ledomsky invaginated it and stitched over with Lembert sutures. The patient made an uneventful recovery. Ledomsky considers the floating spleen the primary etiological factor in the strangulation of both loops.

A Skin Reaction in Carcinoma from the Subcutaneous Injection of Human Red Blood Cells. Preliminary Report. CHARLES A. ELSBERG, New York. *Journal of the American Medical Association*, March 27, 1909.

That hemolysis so often occurs, *in vitro*, on mixing with red blood cells the serum from carcinoma patients suggested to Elsberg the possibility of securing, with perhaps even more frequency, a local reaction by injecting human red blood cells subcutaneously in patients with carcinoma.

Blood drawn from the vein of a healthy individual is defibrinated, and the blood cells repeatedly centrifuged and washed in salt solution. Five minims of a 20 per cent. suspension (in saline solution) of these cells are injected subcutaneously in the forearm of the suspect. Elsberg's preliminary report indicates the possibility of a diagnostic usefulness for this test.

A "positive reaction" is marked by the appearance, in 3 to 12 hours, of a slightly raised, tender, dusky red area at the site of injection, disappearing in 8 to 24 hours—entirely or leaving a brownish or yellowish discoloration. In 34 cases of known carcinoma all reacted positively; likewise three in four cases of sarcoma. The reaction in 100 cases, normal or suffering with various diseases other than new growths, was negative in all but three. Cases of pulmonary tuberculosis were among these that reacted negatively! (A positive reaction appeared in some cases, not suspected of carcinoma, in which cancer was found at operation.)

Diagnosis of Carcinoma of the Rectum. L. KUTTNER. *Zeitschrift für Krebsforschung*, 1909, Vol. II.

For the palpation of carcinoma high up in the rectum (beyond the palpating finger) the bowels are constipated by bismuth for several days; occasionally, by the simple procedure, the tumor may be pushed down so that it can be felt. Another method is to thoroughly empty the lower bowel, when the tumor may float up and be felt through the abdomen. To aid this "floating," the rectum may be carefully inflated with a double tube. Of considerable value in the diagnosis of high-seated growths is the radiograph taken after bismuth emulsion is injected into the rectum; this not infrequently shows the situation and extent of the stricture.

Suture of Heart Wounds. G. T. VAUGHAN, Washington. *Journal of the American Medical Association*, February 6, 1909.

Vaughan gives a historical sketch of the operative surgery of the heart and reports a case of successful suturing of a wound, one-third of an inch in length, opening into the right ventricle. Two rows of silk sutures were used and two bleeding points caught up and ligated with catgut. The pericardium was closed with a continuous catgut suture without drainage. He tabulates and analyzes the reported cases, and summarizes his conclusions substantially as follows: 1. There is no question as to the propriety of operation, since 35 per cent. of the patients recover, as compared with 15 per cent. (according to Holmes and Fisher, 1881) of recoveries after non-operative treatment of heart wounds—a gain of 20 per cent. 2. The mortality is practically the same as that of twelve years ago, when the operation was first attempted, and it behooves the surgeon to study the matter and seek for some improvement. 3. The two chief causes of death are hemorrhage and inflammation of the pleura or pericardium. Probably nearly everything possible has been done to prevent hemorrhage, but since more than half the patients who survive over twenty-four hours become infected, there is room for great improvement in this respect. 4. To prevent this, besides the observance of strict asepsis, the question of opening the pleura and the drainage of the pleura and pericardium must be considered of the greatest importance. 5. As a rule, therefore, the pericardium and pleura should not be drained.

Extraperitoneal Cesarean Section (*Ueber den Extraperitonealen Kaiserschnitt*). A. DÄDERLEIN, Munich. *Zentralblatt für Gynäkologie*, January 23, 1909.

Frank performed Cesarean section in infected cases by a transverse incision just above the symphysis; opening up the peritoneum, then sewing the peritoneal flaps to the anterior surface of the cervical segment before incising the uterus. Sellheim went a step further by peeling the intact peritoneum upward from the bladder and cervix so as to perform his hysterotomy entirely extraperitoneally. Unfortunately it is not always technically possible to mobilize the peritoneum in this fashion. Däderlein, in two cases, used the following technic with success and ease. He made a suprasymphyseal transverse incision (method of Pfannenstiel), additionally incising the right rectus fibers a trifle. He then separated the peritoneum *laterally*, instead of in the median line, and found that a large portion of the lower uterine segment could be exposed with ease. The ureter did not come into view. He then incised the uterus in a longitudinal direction (care must be taken not to injure the child, as the uterine wall is thin), and extracted *by means of forceps* through the incision. The uterus was closed in layers and the abdominal wound sewed up without drainage. The peritoneum laterally is so freely mobile that the difficulties encountered in the other methods is completely obviated.

Osmic Acid Injections for the Relief of Trifacial Neuralgia. H. H. GERMAIN, Boston. *Boston Medical and Surgical Journal*, February 4, 1909.

The author has operated on 11 cases according to Murphy's method of injecting a 2% sol. of osmic acid peripherally. Three cases were well after two years; two cases were well after one and a half years; one case well 15 months after, but with recurrence in another branch; one recurrence in two months; one in one year, and one in two years. One case was lost sight of.